



IJCAI-16

25th International Joint Conference on Artificial Intelligence

New York City, July 9–15, 2016
www.ijcai-16.org

Organizing Institutions

IJCAI

The International Joint Conferences on Artificial Intelligence

AAAI

The Association for the Advancement of Artificial Intelligence

Welcome to IJCAI 2016

Welcome to the Twenty-fifth International Joint Conference on Artificial Intelligence!

We are delighted to welcome you to New York, one of the most exciting cities of the world, to take part in IJCAI, the leading conference on the thrilling field of Artificial Intelligence. AI today has a tremendous impact. It is in all the media and makes a real difference. At IJCAI-16, you will have the opportunity to meet some of the world's leading AI researchers, to learn first-hand about their newest research results and developments, and to catch up with current AI trends in science and industry. And, of course, IJCAI-16 will be the perfect forum for presenting your own achievements, both to specialists in your field, and to the AI world in general.

IJCAI-16 is the first conference taking place only one year after the last IJCAI. Switching to an annual conference did not have a negative effect on the number of submissions; to the contrary, IJCAI-16 received a record number of papers, around 2300, out of which 551 have been selected for presentation. This clearly underscores the fact that IJCAI is the leading international conference on Artificial Intelligence.

We are also glad to report that about two-thirds of the IJCAI-16 participants are students, an unusually high percentage. We believe this is a clear indication that our field is flourishing, and that the future of AI will be in the hands of excellent researchers.

The conference includes workshops, tutorials, exhibitions, demonstrations, invited talks, and paper/poster presentations. On Friday there will be an Industry Day, with presentations from the top AI companies; and there will be an AI Festival, open to the public, consisting of the IJCAI award winner's talks. You will not want to miss out on this highlight, so plan to stay at IJCAI-16 until the very end.

The conference (including workshops and tutorials) takes place at the Hilton in midtown Manhattan. The Hilton is just a ten-minute walk from Central Park, where the conference banquet will be held, and half a block from the world-famous Museum of Modern Art, where we will have the opening reception. Times Square, the Broadway theater district, the Empire State Building and many other famous tourist attractions are all in walking distance—an extra reason to join us and to add a couple of days to your visit.

Looking forward to meeting you in New York!

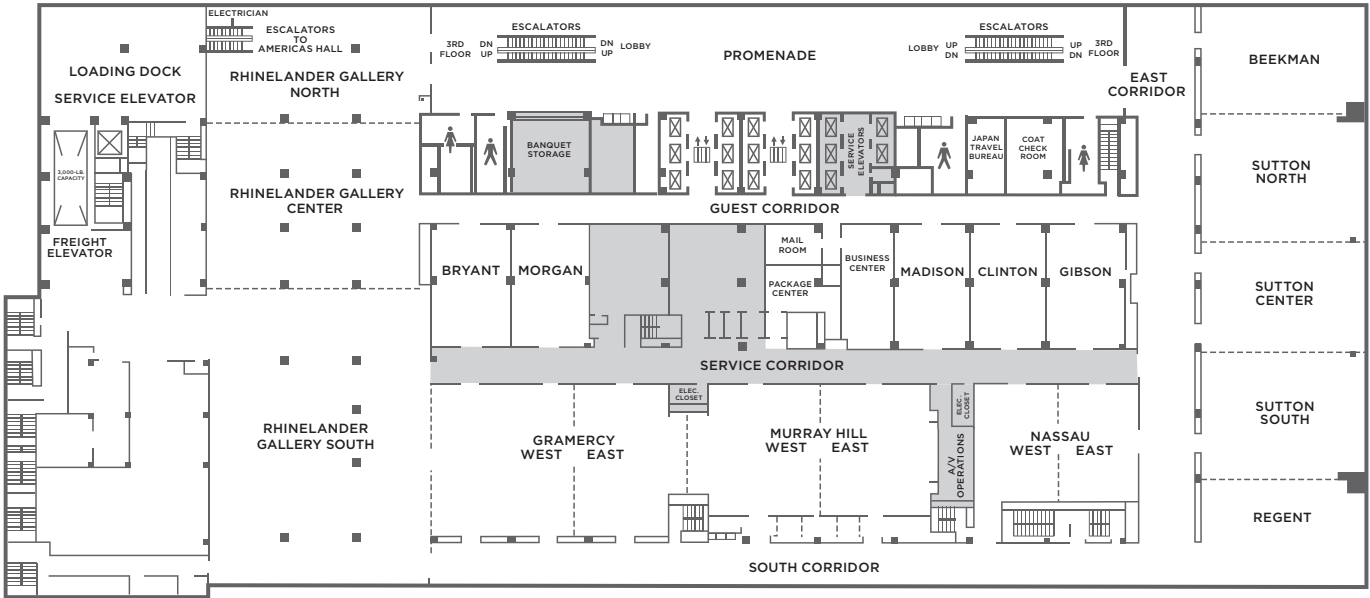
—The IJCAI-16 Conference Committee

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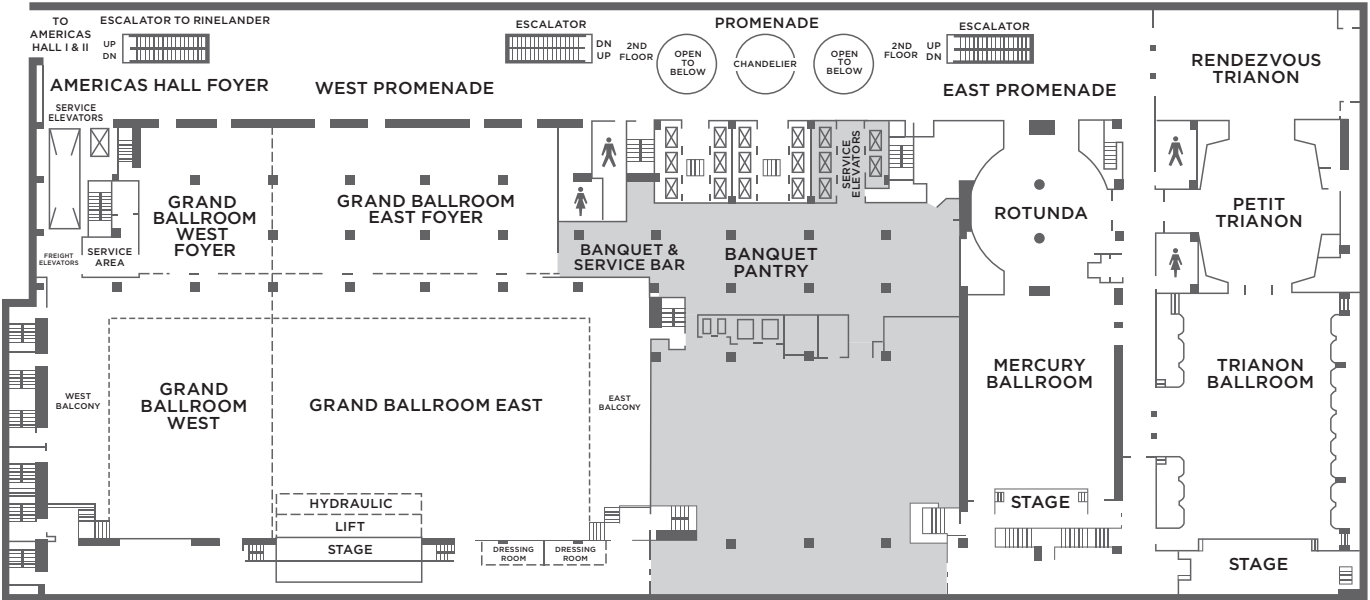
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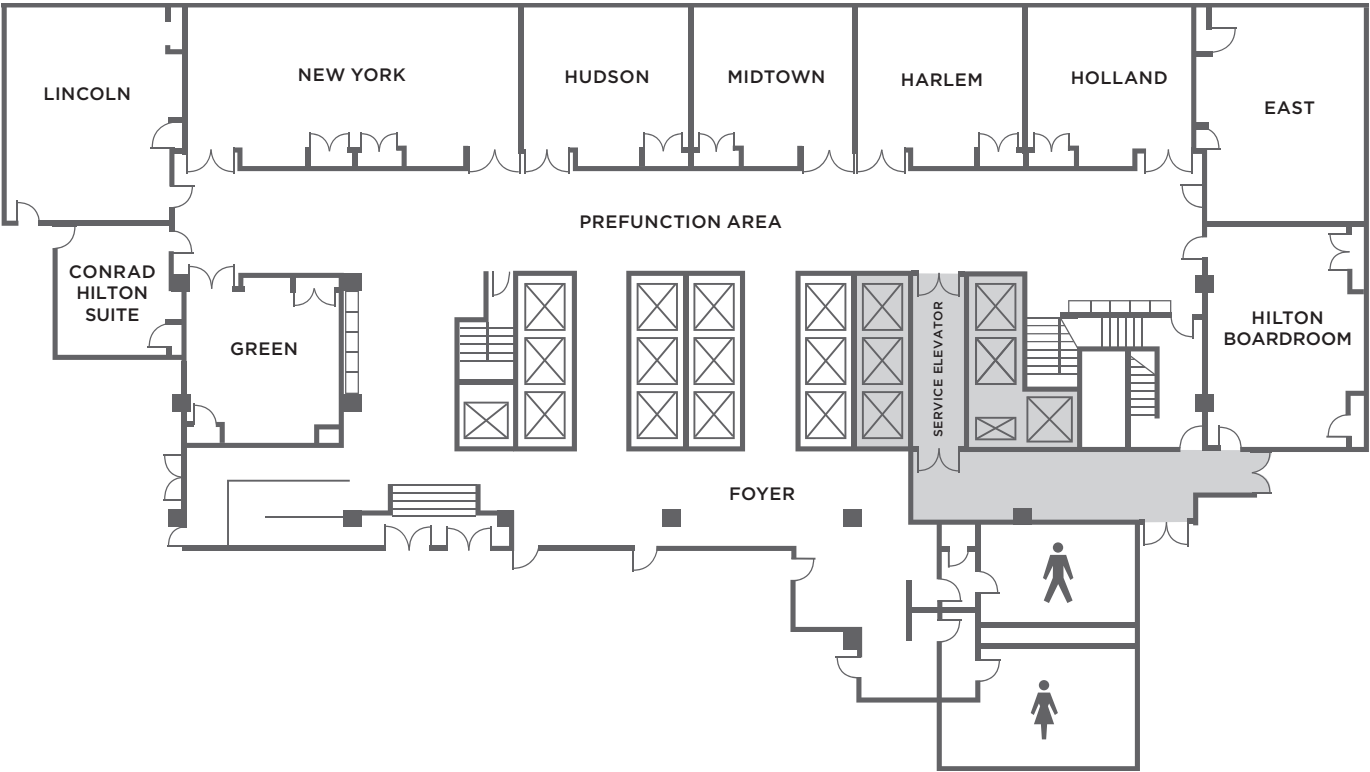
Hilton New York – Second Floor



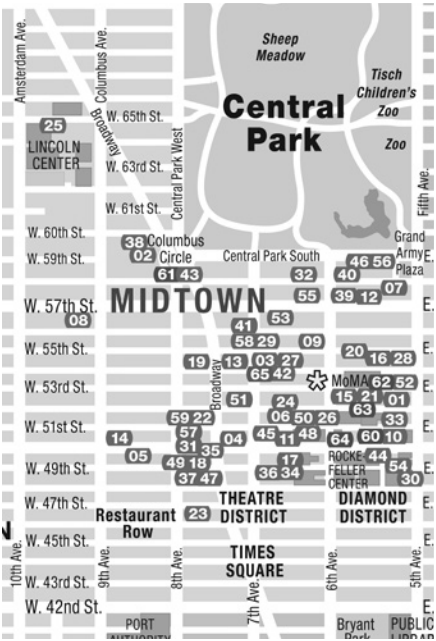
Hilton New York – Third Floor



Hilton New York – Fourth Floor



Midtown West
Points of Interest



Hotel

New York Hilton Midtown
1335 Sixth Ave. (53rd–54th Sts./6th Ave.)

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AI in NYC



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IJCAI 2016 Awards

The IJCAI Organization is proud to announce the IJCAI-16 Awards!	<u>IJCAI-16 Award for Research Excellence</u> Michael I. Jordan
<u>IJCAI-16 John McCarthy Award</u> Moshe Tennenholtz	<u>IJCAI-16 Computers and Thought Award</u> Percy Liang
<u>Donald E. Walker Distinguished Service Award</u> Erik Sandewall	
The IJCAI-16 Award for Research Excellence, the John McCarthy Award and the Computers and Thought Award are awarded by the IJCAI Board of Trustees, upon recommendation by the IJCAI-16 Awards Selection Committee, which consists this year of Hector Levesque, University of Toronto (CANADA); Joelle Pineau, McGill University (CANADA); Peter Stone, University of Texas at Austin (USA); Sebastian Thrun, Udacity and Stanford University (Chair) (USA); and Qiang Yang, Hong Kong University of Science and Technology (HONG KONG, China).	
The IJCAI Awards Selection Committee receives advice from members of the IJCAI-16 Awards Review Committee, who comment on the accuracy of the nomination material and provide additional information about the nominees. The IJCAI-16 Awards Review Committee is the union of the former Trustees of IJCAI, the IJCAI-16 Advisory Committee, the Program Chairs of the last three IJCAI conferences, and the past recipients of the IJCAI Award for Research Excellence and the IJCAI Distinguished Service Award, with nominees excluded.	
IJCAI-16 Award for Research Excellence	
The Research Excellence award is given to a scientist who has carried out a program of research of consistently high quality yielding several substantial results. Past recipients of this honor are the most illustrious group of scientists from the field of Artificial Intelligence; They are: John McCarthy (1985), Allen Newell (1989), Marvin Minsky (1991), Raymond Reiter (1993), Herbert Simon (1995), Aravind Joshi (1997), Judea Pearl (1999), Donald Michie (2001), Nils Nilsson (2003), Geoffrey E. Hinton (2005), Alan Bundy (2007) , Victor Lesser (2009), Robert Anthony Kowalski (2011), Hector Levesque (2013) and Barbara Grosz (2015). The winner of the 2016 Award for Research Excellence is Michael I. Jordan, Pehong	

Chen Distinguished Professor at the Department of EECS, University of California, Berkeley. Professor Jordan is recognized for his groundbreaking and impactful research in both the theory and application of statistical machine learning.	IJCAI-16 John McCarthy Award
The Trustees of the International Joint Conferences on Artificial Intelligence (IJCAI) are pleased to announce the second IJCAI John McCarthy research award. This award is intended to recognize established mid-career researchers that have built up a major track record of research excellence in artificial intelligence. Recipients of the award will have made significant contributions to the research agenda in their area and will have a first-rate profile of influential research results. The award is named for John McCarthy (1927-2011), who is widely recognized as one of the founders of the field of artificial intelligence. As well as giving the discipline its name, McCarthy made fundamental contributions of lasting importance to computer science in general and artificial intelligence in particular, including time-sharing operating systems, the LISP programming languages, knowledge representation, common-sense reasoning, and the logicist paradigm in artificial intelligence.	The award was established with the full support and encouragement of the McCarthy family.
The winner of the 2015 inaugural John McCarthy Award was Bart Selman, Professor at the Department of Computer Science, Cornell University.	The winner of the 2016 John McCarthy Award is Moshe Tennenholtz, Professor at the William Davidson Faculty of Industrial Engineering and Management, Technion - Israel Institute of Technology. Professor Tennenholtz is recognized for his research and leadership in multiagent systems and the interaction between AI and game theory.
IJCAI-16 Computers and Thought Award	The Computers and Thought Award is presented at IJCAI conferences to outstanding young scientists in artificial intelligence. The award was established with royalties received from the book, Computers and Thought, edited by Edward Feigenbaum and Julian Feldman; it is currently supported by income from IJCAI funds. Past recipients of this honor have been: Terry Winograd (1971), Patrick Winston (1973), Chuck Rieger (1975), Douglas Lenat (1977), David Marr

(1979), Gerald Sussman (1981), Tom Mitchell (1983), Hector Levesque (1985), Johan de Kleer (1987), Henry Kautz (1989), Rodney Brooks (1991), Martha Pollack (1991), Hiroaki Kitano (1993), Sarit Kraus (1995), Stuart Russell (1995), Leslie Kaelbling (1997), Nicholas Jennings (1999), Daphne Koller (2001), Tuomas Sandholm (2003), Peter Stone (2007), Carlos Guestrin (2009), Andrew Ng (2009), Vincent Conitzer (2011), Malte Helmert (2011), Kristen Grauman (2013) and Ariel Procaccia (2015). The winner of the 2016 IJCAI Computers and Thought Award is Percy Liang, Assistant Professor at the Artificial Intelligence Lab, Stanford University. Professor Liang is recognized for his contributions to both the approach of semantic parsing for natural language understanding and better methods for learning latent-variable models, sometimes with weak supervision, in machine learning.

Donald E. Walker Distinguished Service Award

The IJCAI Distinguished Service Award was established in 1979 by the IJCAI Trustees to honor senior scientists in AI for contributions and service to the field during their careers. Previous recipients have been Bernard Meltzer (1979), Arthur Samuel (1983), Donald Walker (1989), Woodrow Bledsoe (1991), Daniel G. Bobrow (1993), Wolfgang Bibel (1999), Barbara Grosz (2001), Alan Bundy (2003), Raj Reddy (2005), Ronald J. Brachman (2007), Luigia Carlucci Aiello (2009), Raymond C. Perrault (2011), Wolfgang Wahlster (2013) and Anthony G. Cohn (2015).

At IJCAI-16, the Donald E. Walker Distinguished Service Award will be given to Erik Sandewall, Professor of Computer Science (retired) at the Department of Computer and Information Science at Linköping University. Professor Sandewall is recognized for his substantial contributions, as well as his extensive service to the field of Artificial Intelligence throughout his career. He is one of the founders of IJCAI and he served as the Editor-in-Chief of the Artificial Intelligence Journal for many years and made significant contributions to the success of the journal and to the wider dissemination of AI into the scientific community.

IJCAI 2016 Conference

Social Events

IJCAI 2016 Opening Reception

The IJCAI-16 Opening Reception will be held at the Museum of Modern Art on Monday, July 11, from 7:00 to 9:00. MoMA is one of the largest and most important museums of twentieth-century and contemporary art in the world.

<http://moma.org/>

During the reception, the first floor with the Sculpture Garden (weather permitting) and the fifth floor galleries will be open.. The fifth floor holds a rotating collection of classic works of art from the 1880’s to the 1940’s. No food or drink is permitted on the fifth floor.

To be admitted to the reception, bring your conference badge. If you have purchased an additional invitation for a guest, you will be given a ticket for the guest when you register.

The Museum is a half-block walk from the conference venue at the Hilton. Walk out the front entrance of the Hilton, cross 6th Avenue, and continue walking eastward on 53rd Street. MoMA is on the left-hand side of the street.

IJCAI 2016 Conference Banquet

The IJCAI-16 Conference Banquet will be held at the Central Park Zoo on Wednesday July 13 from 6:30 to 8:30. The zoo was created in 1864, and occupies 6.5 acres at the south-east corner of Central Park. It is managed by the Wildlife Conservation Society. It is home to 130 species in naturalistic environments.

<http://centralparkzoo.com/>

At 8:00 there will be a sea lion show.

To be admitted to the banquet, bring your conference badge. Please note that only participants who have a full registration are invited to the banquet; we are unable to include participants with a student registration. If you have purchased an additional invitation for a guest, you will be given a ticket for the guest when you register.

The Zoo is a 15 minute walk from the conference venue at the Hilton.

Directions (see map p. 5)

- *Exiting the main entrance of the Hilton, turn left and walk north on 6th Avenue.*
- *6th Avenue comes to an end at Central Park South.*
- *Cross Central Park South.*
- *Turn right walking east along the border of the park.*
- *When you reach 5th Avenue, you will be at the south-east corner of the park*
- *Turn left, continuing to follow the border of the park.*
- *The entrance to the zoo is at 64th Street. The zoo is lower than street level; there are both stairs and a ramp down from the street to the level of the zoo.*
- *Alternatively, you can enter the Park at 6th Ave. and Central Park South and then wander toward the northeast until hitting the zoo.*

Student-Only Reception

The student reception will be held on Thursday, July 14, in the Rhinelander Gallery at the Hilton, 2nd floor.

We hope that the reception may be an ideal venue for students to network with fellow students from around the world, exchange experiences, enjoy frank discussions of the older generation and the educational system, learn about research opportunities, and enjoy a great moment strengthening social links with their peers.

Please bring your conference badge to gain admission to the reception. Only participants who have a student registration are admitted.

Lunch with a Fellow

Thanks to the generous support of both AAAI and EurAI, early career researchers are invited to a mentoring lunch with AAAI and EurAI Fellows. Each Fellow will take 4 or 5 researchers out to lunch, to offer advice and talk science. This is a chance to meet your scientific heroes!

Early career researchers can sign up from June 25th at: <http://tinyurl.com/IJCAI-lunch>

Meet your Fellow in front of the Registration Desk at 12:35 on the designated day. Contact Toby Walsh, toby.walsh@nicta.com.au for more information.

Special Events Schedule

Sunday, July 10

8:30 am–6:30 pm
IJCAI Trustees Meeting
Room: Holland

1:00 pm–5:00 pm
AAAI Executive Council Meeting
Room: New York

Monday, July 11

8:30 am–12:30 pm
IJCAI Trustees Meeting
Room: Holland

1:30 pm–5:30 pm
IJCAI Executive Committee Meeting
Room: New York

Tuesday, July 12

12:35 pm–2:00 pm
AI Journal Editorial Board Meeting
Room: New York

3:00 pm–4:00 pm
International AI Societies Meeting
Room: New York

3:10–5:00 pm
Addressing Gender Imbalance in AI
Room: Morgan

Wednesday, July 13

9:00 am–11:00 am
IJCAI-ECAI-AAMAS-ICML Meeting
Room: Holland

Thursday, July 14

3:00 pm–3:30 pm
IJCAI Annual Business Meeting
Room: New York

3:10 pm–4:35 pm
Panel on OSTP Workshops
Room: Ballroom

Friday, July 15

10:00 am–11:00 am
IJCAI-16 Wrap-up Meeting
Room: Holland

12:35 pm–2:00 pm
IJCAI Trustees Meeting
Room: Holland

Exhibits

The exhibit program provides an opportunity to companies to present their AI activities and for conference participants to find out about them.

The exhibits will be located in the Sutton Complex Foyer on the second floor of the Hilton.

Exhibit Hours

- Tuesday, July 12: 9:30–5:00
- Wednesday, July 13: 9:30–5:00
- Thursday, July 14: 9:30–5:00
- Friday, July 15: 9:30–11:30

The following exhibitors will be present at IJCAI-16.

Baidu

www.baidu.com

Baidu was founded in 2000 by Internet pioneer Robin Li, creator of visionary search technology Hyperlink Analysis, with the mission of providing the best way for people to find what they’re looking for online. Over the past decade we have strived to fulfill this mission by listening carefully to our users’ needs and wants. To provide intelligent, relevant search results for the tens of billions of queries that are entered into our search platform every day, we focus on powering the best technology optimized for up-to-date local tastes and preferences. Our deep understanding of Chinese language and culture is central to our success and this kind of knowledge allows us to tailor our search technology for our users’ needs. Just to cite one example, we believe there are at least 38 ways of saying “I” in the Chinese language. It is important that we recognize these nuances to effectively address our users’ requests.

Datatang

Datatang is a global leading data provider. We are the trusted partner to many of the most influential businesses and institutions in the world. We believed that the ultimate data solution is an important point for AI industry. With our rich experiences, Datatang is able to provide customized data support to meet various customer needs, while specialized in tailored data of speech, image, and text. Our data is mostly wide use in ASR, autonomous driving, smart home control, and in-car entertainment & face recognition systems. We are also partner

with our clients in over 12 different industry sectors, and work with dozen of government agencies, state-owned enterprises, private-held domestic companies, multination corporations, and non-profit institutions, to accumulate data from vertical industries.

MLconf

MLconf is the Machine Learning Conference. It gathers communities to discuss the recent research and application of Algorithms, Tools, and Platforms to solve the hard problems that exist within organizing and analyzing massive and noisy data sets.

IBM Watson

www.ibm.com/smarterplanet/us/en/ibmwatson/

IBM Watson is a technology platform that uses natural language processing and machine learning to reveal insights from large amounts of unstructured data.

Microsoft

www.microsoft.com

At Microsoft, we’re motivated and inspired every day by how our customers use our software to find creative solutions to business problems, develop breakthrough ideas, and stay connected to what’s most important to them. We run our business in much the same way, and believe our eight business divisions offer the greatest potential to serve our customers. We are committed long term to the mission of helping our customers realize their full potential. Just as we constantly update and improve our products, we want to continually evolve our company to be in the best position to accelerate new technologies as they emerge and to better serve our customers.

Elsevier

www.elsevier.com/computerscience

Elsevier is committed to making important contributions to the artificial intelligence community by delivering world-class information and innovative tools. Elsevier’s Artificial Intelligence, which commenced publication in 1970, is now the generally accepted premier international forum for the publication of results of current research in this field. The journal welcomes foundational and applied papers describing

mature work involving computational accounts of aspects of intelligence. Please visit us at our stand or visit www.elsevier.com/computerscience for more information about Artificial Intelligence journal and Elsevier.

Xiao

Shanghai Xiao Robot Technology Co., Ltd.is a leading company engaged in Chinese natural language processing. It operates for technology development of intelligent services by robots and for its industry application with human-computer interaction as core technology.

Tianchi

Tianchi (tianchi.aliyun.com), based on the AliCloud open data processing service (ODPS), provides big data and the distributed computing resources to data enthusiasts worldwide. It aims to build a state-of-the-art platform for “crowd intelligence”, and contributes data talents to the cloud eco-system. We host big data contests, conduct academic research, run curriculum cooperation and certificate data heros. In this platform, users can develop and deploy novel models in a convenient way.

Springer

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Sony Computer Science Laboratories, Inc.

www.sonycsll.co.jp

Sony CSL was founded in February 1988. Each Sony CSL researcher sets an ambitious goal and approaches it systematically using Open Systems Science, publishing his or her

findings along the way. We believe that the best results are produced by individuals acting independently, or as members of an ad hoc team, and that a laboratory should offer the best possible conditions to support such activities. At Sony CSL, value is assessed by the degree to which achievements are perceived to contribute to humanity and society, to new science and technology, to industrial progress, and to product development.

This is the environment in which our researchers work for the global good, seeking to use their findings to change the world in which we live. The benefits of this research are returned to society through the activities of the Sony Group or commercialized through in-house business proposals. Studying extremely diverse realms of knowledge, and motivated to make a meaningful contribution, Sony CSL researchers inspire each other to keep exploring new domains, new concepts, new business areas and new technologies.

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IJCAI-17

www.ijcai-17.org

We will have a booth to publicize the forthcoming IJCAI-17 conference in Melbourne, Australia.

Posters

Every technical paper at IJCAI-16 will have both a 12 minute oral presentation and a poster presentation the same day, where the authors can meet with IJCAI participants to discuss their work at greater length. Posters presentations will be held in the Rhinelander Gallery, on the second floor of the Hilton. The posters will be up all day on the day when the talk is given. The presenters are expected to be available at their poster tables during the coffee break after their talk. Presenters are invited to post additional times that they will be available at the web page.

<http://ijcai-16.org/index.php/welcome/view/PosterAndDemoTimes>

IJCAI–JAIR Best Paper Prize

The 2016 IJCAI-JAIR Best Paper Prize goes to the following paper:

Christian Geist, Ule Endriss (2011)
“Automated Search for Impossibility Theorems in Social Choice Theory: Ranking Sets of Objects”
Volume 40, pages 143–174

This article presents a core AI result in computational social choice using automatic theorem proving techniques, by studying axioms that relate preferences over individual objects with preferences over sets of objects. These axioms are represented as formulae in a many-sorted first-order-logic that are then mapped into propositional logic formulae amenable and tackled using a SAT solver. A key contribution of the paper is a result showing that inconsistencies found for a fixed domain size can be extended to larger domains, leading to an impossibility theorem. Using this approach, the authors verify a number of known theorems and discover several new ones. Overall, the contributions made in this work are of considerable importance for computational social choice and for AI in general; they include: (i) a practical automatic method for theorem search, (ii) the verification of a number of well-known theorems, and (iii) the automatic discovery of several new and non-trivial impossibility theorems in social choice.

It was also decided that the following paper should be recognized with an honorable mention:

Perukrishnen Vytelingum, Thomas Voice, Sarvapali D. Ramchurn, Alex Rogers, Nicholas R. Jennings (2011)
“Theoretical and Practical Foundations of Large-Scale Agent-Based Micro-Storage in the Smart Grid”
Volume 42, pages 765–813

AI Journal Awards

2016 Classic Paper Award

“Real-time heuristic search”
Richard E. Korf
Artificial intelligence 42 (2-3), pp 189-211, 1990

This is the seminal paper in real-time heuristic search over the basic state model considered in AI, where actions have deterministic effects and information is complete. While standard heuristic search methods are aimed at solving problems off-line, real-time search methods are used on-line for selecting the next action to do after some form of lookahead. Korf’s minimin and real-time A* algorithms take inspiration in the ideas underlying search in 2-player games, while Learning Real-time A* (LRTA*), where the heuristic values are updated dynamically during the search, was the first to capture two key properties: avoidance of loops and convergence to the optimal solution. LRTA* remains a key reference in the field, where a number of variants have been developed that work under slightly different assumptions, including the Real-time dynamic programming algorithm (RTDP), that can be regarded as generalization of LRTA* to Markov Decision Processes.

2016 Prominent Paper Award

“Monte-Carlo tree search and rapid action value estimation in computer Go”
Sylvain Gelly and David Silver
Artificial Intelligence 175 (11), pp 1856-1875, 2011

Go is an ancient Chinese board game that has long been considered one of the great challenges in AI. While for a number of years computer programs have managed to beat the world’s leading human players in games like checkers and chess, the high level of intuition and evaluation required by Go made it tough for AI search methods to crack. This has changed in recent years, where the last milestone was the recent defeat of the legendary Go player Lee Se-dol by AlphaGo, a program developed by Google DeepMind. The previous milestone, however, that enabled this breakthrough, was achieved a decade ago through the use of Monte-Carlo Tree Search augmented with a number of enhancements. This led to programs that defeated human professional players and achieved master (dan) level in 9x9 Go. That work was reported in 2007 in two papers: one by Rémi Coulom in the Int. Computer Games Association Journal, the other by Sylvain Gelly and David

Silver at the ICML 2007 conference. This AIJ paper is a follow-up of the latter, covering two of the enhancements: rapid action value estimation and heuristic initialization. These extensions led to a program that achieved master level in 19x19 Go for the first time.

Conference at a Glance

DATE	MORNING	AFTERNOON	EVENING
Saturday, July 9	Registration; Workshops; Tutorial	Registration; Workshops; Tutorial	
Sunday, July 10	Registration; Workshops; Tutorial	Registration; Workshops; Tutorial	
Monday, July 11	Registration; Workshops; Tutorial	Registration; Workshops; Tutorial	Reception, Museum of Modern Art
Tuesday, July 12	Technical Program**	Technical Program	
Wednesday, July 13	Technical Program	Technical Program	Banquet, Central Park Zoo
Thursday, July 14	Technical Program	Technical Program	Student Reception
Friday, July 15	Technical Program; Industry Day	AI Festival: IJCAI Awards; Industry Day; Closing Event	
**The Technical Program Tuesday, Wednesday, Thursday and Friday includes: Oral and poster presentation of research papers; Invited talks; Early Career Spotlight talks; Panels; Demonstrations; Exhibitions; and Competitions.			

An electronic version of the entire IJCAI-16 schedule is available via this link: <http://confer.csail.mit.edu/ijcai2016/schedule>

The schedule can also be downloaded to smartphones using the Confer app available at the link.

Schedule at a Glance

Tuesday, July 12

TIME	BEEKMAN PARLOR	MADISON SUITE	CLINTON SUITE	SUTTON NORTH	GIBSON SUITE	SUTTON CENTER	SUTTON SOUTH		REGENT PARLOR	BALLROOM	RHINELANDER GALLERY
8:30–9:10	Opening Remarks - Ballroom										Posters (Main track, AIW track, Doctoral Consortium track) and Demonstrations
9:10–9:55	Invited Talk on AlphaGo - David Silver (Google DeepMind) - Ballroom										
10:05–11:05	Agent1	KR1	Planning1	Multi1	Constraints1	AIW1		EarlyCareer - Shahaf, Salakhutdinov	Best of ICRA, ICCV		
11:05–11:35	Coffee										
11:35–12:35	Agent2	ML1	Planning2	Mult2	Constraints2	AIW2		EarlyCareer - Choi, Gupta	Best of CADE		
12:35–14:00	Lunch										
14:00–15:00	Invited Talks - Wolfram Burgard (Ballroom East), Sheila McIlraith (Ballroom West)										
15:10–16:35	UA1	KR2	Robotics1	HAA1	Search1	NLP1				Panel (TBD)	
16:35–17:05	Coffee										
17:05–18:05	Agent3	ML2	Planning3	HAA2	Search2	NLP2		EarlyCareer - Coles, Mausam	Best of ICAPS		
18:05–20:00	Posters (Main track, AIW track, Doctoral Consortium track) and Demonstrations										

Wednesday, July 13

TIME	BEEKMAN PARLOR	MADISON SUITE	CLINTON SUITE	SUTTON NORTH	GIBSON SUITE	SUTTON CENTER	SUTTON SOUTH		REGENT PARLOR	BALLROOM	RHINELANDER GALLERY
8:30–9:55	ML3	KR3	Robotics2	ML4	ML5	AIW3		EarlyCareer - Doshi-Velez, Ermon	Best of CP		Posters (Main track, AIW track) and Demonstrations
10:05–11:05	Agent4	UAI2	Planning4	Multi3	Constraints3	NLP3		EarlyCareer - Elkind, Jarvisalo	Best of ICLP		
11:05–11:35	Coffee										
11:35–12:35	Agent5	KR4	Planning5	Multi4	Constraints4	NLP4		EarlyCareer - Agarwal, Seuken	Best of UAI		
12:35–14:00	Lunch										
14:00–15:00	Invited Talks - Kevin Leyton-Brown (Ballroom East), Robert Holte (Ballroom West)										
15:10–16:35	ML6	KR5	Robotics3	ML7	ML8	AIW4				Panel (TBD)	
16:35–17:05	Coffee										
17:05–18:05	Agent6	UAI3	Planning6	Multi5	Search3	ML9		EarlyCareer - Saria, Vorobeychik	Workshops Summary1		
18:05–20:00	Posters (Main track, AIW track) and Demonstrations										

Thursday, July 14

TIME	BEEKMAN PARLOR	MADISON SUITE	CLINTON SUITE	SUTTON NORTH	GIBSON SUITE	SUTTON CENTER	SUTTON SOUTH		REGENT PARLOR	BALLROOM	RHINELANDER GALLERY
8:30–9:55	ML10	KR6	Robotics4	ML11	ML12	AIW5		EarlyCareer - Kamar, Aziz	Best of AAMAS, EC		Posters (Main track, AIW track) and Demonstrations
10:05–11:05	Agent7	UAI4	Planning7	Multi6	Constraints5	NLP5		EarlyCareer - Shah, Schockaert	Best of ICML		
11:05–11:35	Coffee										
11:35–12:35	Agent8	KR7	Planning8	Multi7	Search4	ML13		EarlyCareer - Bienvenu, Van den Broeck	Best of IUI		
12:35–14:00	Lunch										
14:00–15:00	Invited Talks - James A. Hendler (Ballroom East), Jonathan Gratch (Ballroom West)										
15:10–16:35	ML14	KR8	KR9	ML15	ML16	AIW6				Panel (OSTP)	
16:35–17:05	Coffee										
17:05–18:05	Agent9	Agent10	Planning9	Multi8	ML17	NLP6		EarlyCareer - Chernova, Varakantham	Workshops Summary2		
18:05–20:00	Posters (Main track, AIW track) and Demonstrations										

Friday, July 15

TIME	BEEKMAN PARLOR	MADISON SUITE	CLINTON SUITE	SUTTON NORTH	GIBSON SUITE	SUTTON CENTER	SUTTON SOUTH		REGENT PARLOR	BALLROOM	RHINELANDER GALLERY	
8:30–9:55	ML18	KR10	ML19	ML20	ML21	ML22				Industry Day Talks - Ballroom	Posters (Main track, AIW track)	
10:05–11:05	Agent11	KR11	Planning10	Agent12	NLP7	AIW7						
11:05–11:35	Coffee											
11:35–12:35	Posters (Main track, AIW track)											
12:35–13:30	Lunch										Industry Day Talks - Sutton Complex	
13:30–14:15	AI Festival (Open to Public) - Ballroom		Talk by Barbara Grosz (Research Excellence Award)									
14:15–15:00			Talk by Percy Liang (Computers and Thought Award)									
15:00–15:30			Coffee									
15:30–16:15			Talk by Moshe Tennenholtz (McCarthy Award)									
16:15–17:00			Talk by Michael I. Jordan (Research Excellence Award)									
17:10–18:00	Closing Ceremony - Sutton Complex											

Invited Speakers

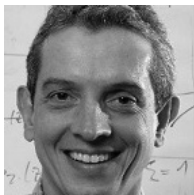
Sheila McIlraith
University of Toronto



“Do as I say *and* as I do: The future of automated programming”

Tuesday, July 12, 2:00–3:00,
Ballroom West

Wolfram Burgard
University of Freiburg, EurAI Speaker



“Probabilistic Techniques for Robot Navigation”

Tuesday, July 12, 2:00–3:00,
Ballroom East

Jonathan Gratch
University of Southern California



“AI’s Final Frontier? Building machines that understand and shape human emotion”

Thursday, July 14, 2:00–3:00,
Ballroom West

James A. Hendler
Rensselaer Polytechnic Institute



“Knowledge Representation in the Era of Deep Learning, Watson and the Semantic Web”

Thursday, July 14, 2:00–3:00,
Ballroom East

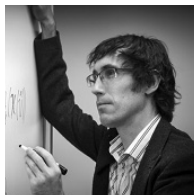
Robert Holte
University of Alberta



“Heuristic Search: Something Old and Something New”

Wednesday, July 13, 2:00–3:00,
Ballroom West

Kevin Leyton-Brown
University of British Columbia



“Incentive Auctions and Spectrum Repacking: A Case Study for ‘Deep Optimization’”

Wednesday, July 13, 2:00–3:00,
Ballroom East

David Silver
Google DeepMind



“Mastering the Game of Go with Deep Neural Networks and Tree Search”

Tuesday, July 12, 9:10–9:55, Ballroom

Early Career Spotlights



Shivani Agarwal
Harvard University



Haris Aziz
Data 61, Sydney



Meghyn Bienvenu
University of Montpellier



Stefano Ermon
Stanford University



Sonia Chernova
Georgia Tech



Abhinav Gupta
Carnegie Mellon University



Yejin Choi
University of Washington



Matti Jarvisalo
University of Helsinki



Amanda Coles
Kings College London



Mausam
Indian Institute of Technology



Finale Velez-Doshi
Harvard University



Ruslan Salakhutdinov
Carnegie Mellon University



Edith Elkind
Oxford University



Steven Schockaert
Cardiff University



Ece Kamar
Microsoft



Sven Seuken
University of Zurich



Suchi Saria
Johns Hopkins University



Guy Van den Broeck
UCLA



Julie Shah
MIT



Pradeep Varakantham
Singapore Management University



Dafna Shahaf
Hebrew University of Jerusalem



Yevgeniy Vorobeychik
Vanderbilt University

Distinguished Papers

IJCAI-16 Distinguished Paper

“Hierarchical Finite State Controllers for Generalized Planning”

Javier Segovia-Aguas, Sergio Jimenez and Anders Jonsson

Wednesday, Planning and Scheduling 6, 5:05–5:17, Clinton Suite

Finite State Controllers (FSCs) are an effective way to represent sequential plans compactly. By imposing appropriate conditions on transitions, FSCs can also represent generalized plans that solve a range of planning problems from a given domain. This paper introduces the concept of hierarchical FSCs for planning by allowing controllers to call other controllers. It is shown that hierarchical FSCs can represent generalized plans more compactly than individual FSCs. Moreover, the call mechanism makes it possible to generate hierarchical FSCs in a modular fashion, or even to apply recursion. The paper also introduces a compilation that enables a classical planner to generate hierarchical FSCs that solve challenging generalized planning problems. The compilation takes as input a set of planning problems from a given domain and outputs a single classical planning problem, whose solution corresponds to a hierarchical FSC.

IJCAI-16 Distinguished Student Paper

“Using Task Features for Zero-Shot Knowledge Transfer in Lifelong Learning”

David Isele, Eric Eaton and Mohammad Rostami

Wednesday, Machine Learning 9, 5:53–6:05

Knowledge transfer between tasks can improve the performance of learned models, but requires an accurate estimate of the inter-task relationships to identify the relevant knowledge to transfer. These inter-task relationships are typically estimated based on training data for each task, which is inefficient in lifelong learning settings where the goal is to learn each consecutive task rapidly from as little data as possible. To reduce this burden, the paper develops a lifelong reinforcement learning method based on coupled dictionary learning that incorporates high-level task descriptors to model the inter-task relationships. It is shown that using task descriptors improves

the performance of the learned task policies, providing both theoretical justification for the benefit and empirical demonstration of the improvement across a variety of dynamical control problems. Given only the descriptor for a new task, the lifelong learner is also able to accurately predict the task policy through zero-shot learning using the coupled dictionary, eliminating the need to pause to gather training data before addressing the task.

Doctoral Consortium

The doctoral consortium is generously sponsored by Artificial Intelligence Journal, the National Science Foundation, and Tencent.

The doctoral consortium at IJCAI provides an opportunity for Ph.D. students to discuss their research interests and career objectives with established researchers in AI, network with other participants, and receive mentoring about career planning and career options, The doctoral consortium will expose students to different areas of research within AI and help in building professional connections within the international community of AI researchers.

The doctoral consortium will be held on Monday, July 11, as an all-day event in the East Room.

Special Events

Addressing Gender Imbalance in AI

A working session for a discussion on issues facing women in AI and CS, with emphasis on possible solutions to increase the number of women in AI. The seesion is open to anyone (women and men) interested in addressing gender imbalance. The session will include a panel to start the discussion and small group discussions to share best practices.

The meeting will take place Tuesday, July 12, 3:10-5:00 PM.

Panel on White House OSTP Workshops on Preparing for the Future of Artificial Intelligence

Come and hear summaries of the four OSTP workshops held this summer (presented by the organizers of each of the workshops).

The panel will be held Thursday, July 14, 3:10–4:35.

Competitions

General Video Games AI Competition

The General Video Game AI Competition (GVG-AI Competition) explores the problem of creating controllers for general video game playing. How would you create a single agent that is able to play any game it is given? Could you program an agent that is able to play a wide variety of games, without knowing which games are to be played?

The competition will use the GVG Framework, a Java framework that can parse and decode Video Game Description Language (VGDL). It can be easily used to play any VGDL game. Besides that, it can be used as an AI benchmark to test General Intelligent agents. The framework has been used in General Video Game Playing (GVGP) competition for multiple years. Recently we added an interface to help people to design level generators for any game. This new interface will be used to run the Procedural Generation Track this year.

Angry Birds AI Competition

Now that Go has been solved, the next challenge for AI is the game of Angry Birds. Unlike Go and other supposedly difficult games, Angry Birds has an infinite number of possible actions to chose from and the exact outcome of each action is unknown in advance. This makes the game very hard for computers to master. It adds to the difficulty that computers have to play live games in the same way humans play them, without any additional information about the exact physics of the game.

The world’s best Angry Birds AI agents meet on July 14 and compete for the title of AIBIRDS 2016 Champion. Like in previous years the competition promises a lot of excitement and fun. On July 15 everyone is invited to challenge the winners of the AI competition and to prove that humans are still better at playing Angry Birds than even the most advanced AI.

Winograd Schema Challenge

The Winograd Schema Challenge was proposed by Hector Levesque in 2001 as an alternative to the Turing Test. It is designed to test a system’s ability to understand natural language and use common sense.

A Winograd schema is a pair of short texts that are identical except for one or two words, and that contain a pronoun that has a different referent in the two sentences. For example:

The trophy does not fit in the suitcase because it is too large.

The trophy does not fit in the suitcase because it is too small.

In the first sentence, the pronoun “it” must clearly refer to the trophy, and in the second the pronoun must refer to the suitcase. On examination of the sentences, it is clear that a program that gets both of these right must draw on some kind of information about the relation between size and fitting; simple linguistic features and word co-occurrence statistics will not suffice.

Contestants in the Winograd Schema challenge will be given a collection of separate sentences with this kind of ambiguous pronoun—some adapted from external texts, others hand-constructed as halves of Winograd Schemas—and required to identify the referent of the pronoun. A program passes the challenge if it achieves human levels of performance.

Brick-and-Mortar Store Recommendation Contest

As mobile devices become ubiquitous in our daily life, people are getting more comfortable to share their real-time locations for various location based services (LBS), such as navigation, car ride hailing, restaurant/hotel booking, etc. As a result, huge amount of user data with location information has been accumulated, which attracts great interest from machine learning/data mining community.

This contest, jointly hosted by Alibaba and Ant Financial Services Group, focuses on nearby store recommendation for users visiting a place that they rarely visited in the past. Specially, participants are supposed to investigate whether the rich online shopping records help in on-sitesales recommendation, under a set of budget constraints that simulating service capacity or number of coupons available.

There are over 1,100 registered players from 21 countries and districts in total. And the top 3 teams will present their solution at the workshop SocInf. All are welcome to this event.

More information available at:
<http://click.aliyun.com/m/4383/>

Best Papers in Sister Conferences Track

In continuation of the tradition started at IJCAI 2011, this track celebrates excellence in the field by featuring 27 presentations of award-winning papers from AI-related conferences.

The best papers that will be presented at IJCAI 2016 are from the following conferences:

- AAMAS
- CADE
- CP
- EC
- ICAPS
- ICCV
- ICLP
- ICML
- ICRA IUI
- UAI

Industry Day

The Industry Day (7/15) is a networking event for industry executives, entrepreneurs and key researchers and students in every area of AI.

Keynote Industry Talks

We are pleased to announce the following invited keynote speakers:

Peter Norvig
Director of Research, Google

Guruduth Banavar
VP, Chief Science Office, Cognitive Computing, IBM

Jihie Kim
VP Software R&D, Samsung

Hiroaki Kitano
President and CEO Sony Computer Science Laboratories

Masahiro Fujita
GM and Chief Distinguished Scientist, Sony CS Labs

Benjamin Grosop
CEO and Co-Founder of Coherent

There will also be a panel on “The Business of AI”.

AI Festival

The final afternoon of the conference will an “AI Festival” featuring invited talks from four AI researchers being hon-oured for their research accomplishments: Michael I. Jordan, winner of the IJCAI-16 Award for Research Excellence, Moshe Tennenholtz, winner of the IJCAI-16 John McCarthy Award, and Percy Liang, winner of the IJCAI-16 Computers and Thought Award. We also have an award talk by the recipient of the IJCAI-15 Award for Research Excellence, Barbara Grosz.

Tutorials

Saturday Tutorial Schedule

TIME	ID	NAME	ROOM
8:45–12:45	T2	Information-theoretic Ideas in Machine Learning	Sutton North
	T3	Belief functions for the working scientist	Sutton Center
	T5	Deep Learning and Continuous Representations for NLP	Regent
	T22	Optimality in Robot Motion and Action	Sutton South
8:45–10:30	T1	Bitcoin: a Basic Tutorial on Decentralized Digital Currencies	Beekman
11:00–12:45	T6	The Internet of Things and Multiagent Systems	Beekman
1:45–5:45	T7	Organ Exchanges: A Success Story of AI in Healthcare	Beekman
	T8	Statistical Relational AI: Logic, Probability, Computation	Sutton North
	T9	Reasoning with Description Logics	Sutton Center
	T10	How Computers Read the Web	Sutton South
1:45–3:30	T11	Multidimensional Text Clustering for Hierarchical Topic Detection	Regent
4:00–5:45	T12	Affect Detection from Spoken and Written Text—Computational Models for Affect and Sentiment Analysis	Regent
All tutorials are in rooms on the 2nd floor of the Hilton.			

Sunday Tutorial Schedule

TIME	ID	NAME	ROOM
8:45–12:45	T14	Lifted Probabilistic Inference in Relational Models	Sutton North
	T15	Rulelog: Rule-based Knowledge Representation and Reasoning	Sutton Center
	T16	Symbolic and structural models for image understanding	Sutton South
	T17	Programming by Optimization: A Practical Paradigm for Computer-Aided Algorithm Design	Regent
8:45–10:30	T13	Eliciting high quality information	Beekman
11:00–12:45	T19	Argument and Cognition	Beekman
1:45–5:45	T21	AI for Smarter Cities	Sutton Center
	T4	Spatio-Temporal Stream Reasoning for Safe Autonomous Systems	Sutton South
	T23	Scalable Big Data Programming Models for AI	Regent
1:45–3:30	T18	Generating Synthetic Populations for Social Modeling	Beekman
	T20	New Advances in Combinatorial Optimization for Graphical Models	Sutton
4:00–5:45	T25	Scalable learning of graphical models	Sutton North
	T24	If Turing had lived longer: how might he have investigated what AI and Philosophy can learn from evolved information processing systems?	Beekman
All tutorials are in rooms on the 2nd floor of the Hilton.			

Monday Tutorial Schedule

TIME	ID	NAME	ROOM
8:45–12:45	T26	Argument Mining	Beekman
	T28	Methodologies for Ontology Based Data Access Applications	Sutton Center
	T29	Introduction to Planning Models and Methods	Sutton South
	T30	Coreference Resolution: Recent Successes and Future Directions	Regent
8:45–10:30	T27	Pattern Recognition on Random Graphs	Sutton North
11:00–12:45	T31	Low-Rank and Sparse Modeling for Data Analytics	Sutton Nort
1:45–5:45	T32	The Soar Cognitive Architecture	Beekman
	T33	Integrating Learning and Search for Structured Prediction	Sutton North
	T35	Deliberative Planning and Acting	Sutton South
1:45–3:30	T34	Solving (Problems with) Quantified Boolean Formulas: Recent Trends and Challenges	Sutton Center
	T36	Research Challenges in Computational Sustainability	Regent
4:00–5:45	T37	Scalable Probabilistic Logics	Sutton Center
	T38	Towards a Unified Framework for Transfer Learning: Exploiting Correlations and Symmetries	Regent
All tutorials are in rooms on the 2nd floor of the Hilton.			

Workshops

Saturday Workshop Schedule

TIME	ID	NAME	ROOM	FLOOR
All day	W1	Bridging the Gap between Human and Automated Reasoning	Concourse G	C
	W3	Computer Games Workshop	Bryant	2
	W4	Workshop on Goal Reasoning	Morgan	2
	W5	2nd International Workshop on Social Influence Analysis (SocInf 2016)	Lincoln	4
	W6	Ethics for Artificial Intelligence	Madison	2
	W8	Interactive Machine Learning: Connecting Humans and Machines	Concourse A	C
	W7	CMNA 16— The 16th Workshop on Computational Models of Natural Argument	Green	4
	W9	Multidisciplinary Workshop on Advances in Preference Handling	Clinton	2
	W10	BOOM: International Workshop on Biomedical informatics with Optimization and Machine learning	Gibson	2
	W14	4th Workshop on Artificial Intelligence for Knowledge Management	Holland	4
AM	W2	Workshop on Scholarly Big Data: AI Perspectives, Challenges and Ideas	New York	4
	W11	FLinAI2016 Fuzzy Logic in AI Workshop	Hudson	4
	W12	Language Sense on Computers	East	4
PM	W13	Workshop on AI for Synthetic Biology	East	4
	W15	Workshop on Human Language Technology and Intelligent Applications	Hudson	4

Sunday Workshop Schedule

TIME	ID	NAME	ROOM	FLOOR
All day	W16	Knowledge Discovery in Healthcare Data	Concourse G	C
	W17	BEYONDLABELLER—Human is More Than a Labeller	Gibson	2
	W19	5th International General Game Playing Workshop	Bryant	2
	W20	Deep Learning for Artificial Intelligence (DL)	Concourse A	C
	W21	9th International Workshop on Agents in Traffic and Transportation (ATT 2016)	Madison	2
	W22	Knowledge-based techniques for problem solving and reasoning	Morgan	2
	W23	Second International Workshop on Multi-Agent Path Finding	East	4
	W24 + W27	Computational modeling of attitudes 4th Workshop on Sentiment Analysis: where AI meets Psychology (SAAIP 2016)	Clinton	4
	W29		Lincoln	4
AM	W25	Argumentation in Logic Programming and Non-Monotonic Reasoning (Arg-LPNMR)	Hudson	4
	W26	W26: Semantic Machine Learning	Green	2
PM	W18	Agent Mediated Electronic Commerce (AMEC/TADA)	Green	4
	W28	Fourth IJCAI Workshop on Heterogeneous Information Network Analysis	Hudson	4

Monday Workshop Schedule

TIME	ID	NAME	ROOM	FLOOR
All day	W30	Advances in Bioinformatics and Artificial Intelligence: Bridging the Gap	Green	4
	W31	Algorithmic Game Theory @ IJCAI Workshop	Bryant	2
	W32	Statistical Relational AI (StarAI)	Concourse G	C
	W33	Deep Reinforcement Learning: Frontiers and Challenges	Concourse A	C
	W34	Fourth International Workshop on Natural Language Processing for Social Media (SocialNLP 2016)	East	4
	W35	Autonomous Mobile Service Robots	Morgan	2
	W36	29th International Workshop on Qualitative Reasoning	Lincoln	4
	W37	Fifth International Workshop on Human-Agent Interaction Design and Models (HAIDM)	Madison	2
AM	W38	Cognitive Knowledge Acquisition and Applications (Cognitum 2016)	Clinton	2
	W39	Interactions with Mixed Agent Types	Hudson	4
PM	W40	Ontologies and Logic Programming for Query Answering	Hudson	4
	W41	Closing the Cognitive Loop: Third Workshop on Knowledge, Data, and Systems for Cognitive Computing	Clinton	2

Schedules

Demonstrations

Demonstrations will be on display all day in the Rhinelander Gallery on the second floor. Demonstration exhibitors may post specific times when they will be available at their booths at the website

<http://ijcai-16.org/index.php/welcome/view/PosterAndDemoTimes>

Tuesday, July 12
Machine Learning / Data Mining

- Robot Scavenger Hunt: a Standardized Framework for Evaluating Intelligent Mobile Robots
- A Tag-based English Math Word Problem Solver with Understanding, Reasoning and Explanation
- Data-based Promotion of Tourist Events with Minimal Operational Impact
- A Demonstration of Interactive Task Learning
- SMACK: An argumentation framework for opinion mining
- PARecommender:A Pattern-based System for Route Recommendation
- Implementation of Learning-Based Dynamic Demand Response on a Campus Micro-grid
- A Tool for generating Interactive Euler diagrams

Wednesday, July 13
Planning / KR / NLP

- An Adaptive Process Management System Implementation based on Situation Calculus, Indigolog and Classical Planning
- Baby Tartanian8: Winning Agent from the 2016 Annual Computer Poker Competition
- AI eXperimentation with the AIX platform
- Interactive Planning-based Hypothesis Generation with LTS++
- Klint: Assisting Integration and Querying of Heterogeneous Knowledge

- Eddy: A Graphical Editor for OWL 2 Ontologies
- KBQA: An Online Template Based Question Answering System over Freebase
- Thou Shalt ASQFor And Shalt Receive The Semantic Answer

Thursday, July 14
Machine Learning / Computer Vision

- Practical 3D tracking using low-cost cameras
- A Virtual Assistant to Help Dysphagia Patients Eat Safely At Home
- Repairing general-purpose ASR output to improve accuracy of spoken sentences in specific domains using artificial development approach
- An Intelligent System for Taxi Service Monitoring, Analytics and Visualization
- VIPR: An Interactive Tool for Meaningful Visualization of High-Dimensional Data
- Demo: Assisting visually impaired people navigate indoors Competitions

Competition Schedule

All competitions will be held in the Morgan Room, on the second floor.

Winograd Schema Challenge

Tuesday July 12, 8:30–12:30

General Video Game AI Competition

Wednesday July 13, All day

Angry Birds Competition

Thursday July 14, All day

The Social Influence Analysis Contest (Brick-and-Mortar Store Recommendation with Budget Constraints) was held prior to the conference. The prize-winning entries will discuss their work at the Workshop on Social Influence Analysis (SocInf 2016), Saturday, July 9, all day, Lincoln room, 4th floor.

Industry Day Schedule

Morning Session (Ballroom)

9:15–9:35
Introduction by Ron Brachman
Director, Jacobs Technion-Cornell Institute

9:35–10:20
Peter Norvig
Director of Research, Google

10:20–11:05
Guruduth Banavar
Chief Science Officer, Cognitive Computing, IBM Research

11:05–11:35
Coffee Break

11:35–12:20
Hiroaki Kitano
President and CEO, Sony Computer Science Laboratories

12:20–1:05
Jihie Kim
VP Software R&D, Samsung

1:05–2:00
Lunch

2:00–2:30
Masahiro Fujita
GM and Chief Distinguished Scientist, Sony CS Labs

2:30–3:00
Benjamin Grosopf
Founder and CEO Coherent Systems

3:00–3:30
Coffee

3:30–4:30
Panel: The Business of AI, 2015–2025



10:05–11:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems ¹ :: Resource Allocation	261 :: To Give or Not to Give: Fair Division for Strict Preferences :: Simina Brânzei, Yuezhou Lv and Ruta Mehta
		758 :: Assigning a Small Agreeable Set of Indivisible Items to Multiple Players :: Warut Suksompong
		1348 :: Complexity of Efficient and Envy-Free Resource Allocation: Few Agents, Resources, or Utility Levels :: Bernhard Bliem, Robert Bredereck and Rolf Niedermeier
		2451 :: Allocating Indivisible Items in Categorized Domains :: Erika Mackin and Lirong Xia
		1808 :: Control of Fair Division :: Haris Aziz, Ildi Schlotter and Toby Walsh
Madison Suite	Knowledge Representation, Reasoning, and Logic ¹ :: Knowledge Representation ¹	1098 :: Distributing Knowledge into Simple Bases :: Adrian Haret, Jean-Guy Mailly and Stefan Woltran
		2374 :: Expressivity of Datalog Variants – Completing the Picture :: Sebastian Rudolph and Michaël Thomazo
		1504 :: Forgetting in Multi-Agent Modal Logics :: Liangda Fang, Yongmei Liu and Hans van Ditmarsch
		1868 :: Strategy Representation and Reasoning for Incomplete Information Concurrent Games in the Situation Calculus :: Liping Xiong and Yongmei Liu
		2014 :: Incomplete Causal Laws in the Situation Calculus using Free Fluents :: Marcelo Arenas, Jorge Baier, Juan Navarro and Sebastian Sardina
Clinton Suite	Planning and Scheduling ¹ :: Activity and Plan Recognition	1099 :: Privacy Preserving Plans in Partially Observable Environments :: Sarah Keren, Avigdor Gal and Erez Karpas
		1075 :: SLIM: Semi-Lazy Inference Mechanism for Plan Recognition :: Reuth Mirsky and Kobi Gal
		2173 :: Plan Recognition as Planning Revisited :: Shirin Sohrabi, Anton Riabov and Octavian Udrea
		2269 :: Goal Recognition Design with Stochastic Agent Action Outcomes :: Christabel Wayllace, Ping Hou, William Yeoh and Tran Cao Son
		2708 :: Moving in a Crowd: Safe and Efficient Navigation among Heterogeneous Agents :: Julio Godoy, Ioannis Karamouzas, Stephen Guy and Maria Gini

10:05–11:05		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications ¹ :: Computational Sustainability	903 :: Efficient Resource Allocation for Protecting Coral Reef Ecosystems :: Yue Yin and Bo An
		92 :: Urban Water Quality Prediction based on Multi-task Multi-view Learning :: Ye Liu, Yu Zheng, Yuxuan Liang, Shuming Liu and David Rosenblum
		1192 :: A Collaborative Filtering Approach to Citywide Human Mobility Completion from Sparse Call Records :: Zipei Fan, Ayumi Arai, Xuan Song, Apichon Witayangkurn, Hiroshi Kanasugi and Ryosuke Shibasaki
		187 :: DeepTransport: Prediction and Simulation of Human Mobility and Transportation Mode at a Citywide Level :: Xuan Song, Hiroshi Kanasugi and Ryosuke Shibasaki
		495 :: Maximum Sustainable Yield Problem for Robot Foraging and Construction System :: Ruohan Zhang and Zhao Song
Gibson Suite	Constraints & Satisfiability ¹ :: Modeling	250 :: Constraint Detection in Natural Language Problem Descriptions :: Zeynep Kiziltan, Marco Lippi and Paolo Torroni
		2127 :: Constraint Acquisition using Recommendation Queries :: Abderrazak Daoudi, Younes Mechqrane, Christian Bessiere, Nadjib Lazaar and El Houssine Bouyakhf
		2015 :: Multiple Constraint Acquisition :: Robin Arcangioli, Christian Bessiere and Nadjib Lazaar
		2832 :: Bias in Algorithm Portfolio Performance Evaluation :: Chris Cameron, Holger Hoos and Kevin Leyton-Brown
		1338 :: Optimizing Molecular Cloning Of Multiple Plasmids :: Thierry Petit and Lolita Petit
Sutton Center	AI and the Web ¹ :: Web-based recommendation systems	1343 :: Item Recommendation for Emerging Online Businesses :: Chun-Ta Lu, Sihong Xie, Weixiang Shao, Lifang He and Philip Yu
		1727 :: A Framework for Recommending Relevant and Diverse Items :: Chaofeng Sha, Xiaowei Wu and Junyu Niu
		2690 :: Matrix Factorization+ for Movie Recommendation :: Jie Jiang, Lili Zhao, Zhongqi Lu, Sinno Jialin Pan and Qiang Yang
		1433 :: Bayesian Probabilistic Multi-Topic Matrix Factorization For Rating Prediction :: Keqiang Wang, Wayne Xin Zhao, Hongwei Peng and Xiaoling Wang
		2602 :: Sherlock: Sparse Hierarchical Embeddings for Visually-aware One-class Collaborative Filtering :: Ruining He, Chunbin Lin, Jianguo Wang and Julian McAuley

11:35–12:35		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems2 :: Social Choice Theory1	417 :: Subset Selection Via Implicit Utilitarian Voting :: Ioannis Caragiannis, Swaprava Nath, Ariel Procaccia and Nisarg Shah
		998 :: Voting-Based Team Formation :: Piotr Faliszewski, Arkadii Slinko and Nimrod Talmon
		1056 :: Elicitation for Preferences Single Peaked on Trees :: Palash Dey and Neeldhara Misra
		1061 :: Preference Elicitation For Single Crossing Domain :: Palash Dey and Neeldhara Misra
		156 :: Computing Pareto Optimal Committees :: Haris Aziz, Jérôme Lang and Jerome Monnot
Madison Suite	Machine Learning1 :: Online Learning	1073 :: Budgeted Multi-armed Bandits with Multiple Plays :: Yingce Xia, Tao Qin, Weidong Ma and Tie-Yan Liu
		1069 :: Frequent Direction Algorithms for Approximate Matrix Multiplication with Applications in CCA :: Qiaomin Ye and Zhihua Zhang
		54 :: Online Bayesian Max-margin Subspace Multi-view Learning :: Jia He, Changying Du, Fuzhen Zhuang, Xin Yin, Qing He and Guoping Long
		2171 :: Tight Policy Regret Bounds for Improving and Decaying Bandits :: Hoda Heidari, Michael Kearns and Aaron Roth
		1535 :: Dual-Memory Deep Learning Architectures for Lifelong Learning of Everyday Human Behaviors :: Sang-Woo Lee, Chung-Yeon Lee, Dong Hyun Kwak, Jiwon Kim, Jeonghee Kim and Byoung-Tak Zhang
Clinton Suite	Planning and Scheduling2 :: Markov Decisions Processes	844 :: Markovian State and Action Abstractions in Monte-Carlo Tree Search :: Aijun Bai, Siddharth Srivastava, Stuart Russell and Richard Doan
		478 :: Decision-Making Policies for Heterogeneous Autonomous Multi-Agent Systems with Safety Constraints :: Ruohan Zhang, Yue Yu, Mahmoud El Chamie, Behcet Acikmese and Dana Ballard
		1298 :: Commitment Semantics for Sequential Decision Making under Reward Uncertainty :: Qi Zhang, Edmund Durfee, Satinder Singh, Anna Chen and Stefan Witwicki
		1356 :: Online Symbolic Gradient-Based Optimization for Factored Action MDPs :: Hao Cui and Roni Khardon
		2088 :: Batch-Switching Policy Iteration :: Shivaram Kalyanakrishnan, Utkarsh Mall and Ritish Goyal

11:35–12:35		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications2 :: AI and Social Sciences	320 :: Taking up the Gaokao Challenge: An Information Retrieval Approach :: Gong Cheng, Weixi Zhu, Ziwei Wang, Jianghui Chen and Yuzhong Qu
		2280 :: Situation Testing-Based Discrimination Discovery: An Causal Inference Approach :: Lu Zhang, Yongkai Wu and Xintao Wu
		2759 :: AI for Cognitive Film Studies - Semantic Q/A with Video and Eye-Tracking Data for Analysing Human Visual Perception :: Jakob Suchan and Mehul Bhatt
		20 :: Modeling contagious M&A via point processes with a profile regression prior :: Junchi Yan, Shuai Xiao, Changsheng Li, Bo Jin, Xiangfeng Wang, Bin Ke, Xiaokang Yang and Hongyuan Zha
		1541 :: Aligning Users Across Social Networks Using Network Embedding :: Li Liu, William Kwok-Wai Cheung, Xin Li and Lejian Liao
Gibson Suite	Constraints & Satisfiability2 :: Constraint Satisfaction	1278 :: Combining the k-CNF and XOR Phase-Transitions :: Jeffrey M. Dudek, Kuldeep S. Meel and Moshe Y. Vardi
		1723 :: Static Symmetry Breaking with the Reflex Ordering :: Jimmy Lee and Zichen Zhu
		1781 :: Optimizing Simple Table Reduction with Bitwise Representation :: Ruiwei Wang, Wei Xia, Roland Yap and Zhanshan Li
		1163 :: Generalizing the Edge-Finder Rule for the Cumulative Constraint :: Vincent Gingras and Claude-Guy Quimper
		1154 :: Heuristics and Really Hard Instances for Subgraph Isomorphism Problems :: Ciaran McCreesh, James Trimble and Patrick Prosser
Sutton Center	AI and the Web2 :: Social network analysis, theories, models, and applications	737 :: Efficient Algorithms for Spanning Tree Centrality :: Takanori Hayashi, Takuya Akiba and Yuichi Yoshida
		1547 :: Understanding Information Diffusion under Interactions :: Yuan Su, Xi Zhang, Philip S. Yu, Wen Hua, Xiaofang Zhou and Binxing Fang
		50 :: What does Social Media Say about Your Stress? :: Huijie Lin, Jia Jia, Liqiang Nie, Guangyao Shen and Tat-Seng Chua
		1693 :: Pay Me and I'll Follow You: Detection of Crowdturfing Following Activities in Microblog Environment :: Yuli Liu, Yiqun Liu, Min Zhang and Shaoping Ma
		2828 :: Max-Margin DeepWalk: Discriminative Learning of Network Representation :: Cunchao Tu, Weicheng Zhang, Zhiyuan Liu and Maosong Sun

15:10–16:35		
PLACE	SESSION	TALK
Clinton Suite	Robotics and Vision1 :: Vision and Perception1	285 :: Action Recognition with Joints-Pooled 3D Deep Convolutional Descriptors :: Congqi Cao, Yifan Zhang, Chunjie Zhang and Hanqing Lu
		462 :: Semi-Supervised Multimodal Deep Learning for RGB-D Object Recognition :: Yanhua Cheng, Xin Zhao, Rui Cai, Zhiwei Li, Kaiqi Huang and Yong Rui
		587 :: Saliency Transfer: An Example-Based Method for Salient Object Detection :: Xin Li, Fan Yang, Leiting Chen and Hongbin Cai
		859 :: Understanding Crowd Scene based on Coherent Recurrent Neural Networks :: Hang Su, Yinpeng Dong, Jun Zhu, Haibin Ling and Bo Zhang
		1466 :: Video-based Person Re-identification by Simultaneously Learning Intra-video and Inter-video Distance Metrics :: Xiaoke Zhu, Xiao-Yuan Jing, Fei Wu, Wangmeng Zuo and Hui Feng
		2394 :: Nonlinear Hierarchical Part-based Regression for Unconstrained Face Alignment :: Xiang Yu, Shaoting Zhang, Zhe Lin and Dimitris Metaxas
		448 :: Highly Accurate Gaze Estimation using a Consumer RGB+Depth Sensor :: Reza Ghlass and Ognjen Arandjelovic
Madison Suite	Knowledge Representation, Reasoning, and Logic2 :: Action, Change and Causality	1576 :: Identification of Causal Effects by Auxiliary Instruments in Linear Systems :: Bryant Chen, Judea Pearl and Elias Bareinboim
		310 :: Sampling-Based Belief Revision :: Michael Thielscher
		2527 :: Plan Synthesis for Knowledge and Action Bases :: Diego Calvanese, Marco Montali, Fabio Patrizi and Michele Stawowy
		793 :: Online Agent Supervision in the Situation Calculus :: Bitu Banihashemi, Giuseppe De Giacomo and Yves Lesperance
		2910 :: Parallel Behavior Composition for Manufacturing :: Paolo Felli, Brian Logan and Sebastian Sardina
		2877 :: Automated Synthesis of Timed Failure Propagation Graphs :: Benjamin Bittner, Marco Bozzano and Alessandro Cimatti
		1174 :: Planning with Task-oriented Knowledge Acquisition for A Service Robot :: Kai Chen, Fangkai Yang and Xiaoping Chen

15:10–16:35		
PLACE	SESSION	TALK
Beekman Parlor	Uncertainty in AI :: Approximate Probabilistic Inference	1224 :: Improving Approximate Counting for Probabilistic Inference: From Linear to Logarithmic SAT Solver Calls :: Supratik Chakraborty, Kuldeep S. Meel and Moshe Y. Vardi
		1599 :: Swift: Compiled Inference for Probabilistic Programming Languages :: Yi Wu, Lei Li, Stuart Russell and Rastislav Bodik
		2148 :: Approximate Probabilistic Inference with Bounded Error for Hybrid Probabilistic Logic Programming :: Steffen Michels, Arjen Hommersom and Peter Lucas
		1332 :: Contextual Symmetries in Probabilistic Graphical Models :: Ankit Anand, Aditya Grover, Mausam . and Parag Singla
		272 :: Bayesian Optimization of Partition Layouts for Mondrian Processes :: Yi Wang, Bin Li, Xuhui Fan, Yang Wang and Fang Chen
		572 :: A Generative Model for Recognizing Mixed Group Activities in Still Images :: Zheng Zhou, Kan Li, Xiangjian He and Mengmeng Li
		700 :: Distance-Preserving Probabilistic Embeddings with Side Information: Variational Bayesian Multidimensional Scaling Gaussian Process :: Harold Soh
Sutton North	Human-Aware AI (IJCAI-16 Theme)1	2480 :: Driver Frustration Detection From Audio and Video in the Wild :: Irman Abdić, Lex Fridman, Daniel McDuff, Erik Marchi, Bryan Reimer and Björn Schuller
		2760 :: Predictive models of malicious behavior in human negotiations :: Zahra Nazari and Jonathan Gratch
		1097 :: Verbalization: Narratives of Autonomous Robot Experience :: Stephanie Rosenthal, Sai Pandi Selvaraj and Manuela Veloso
		2102 :: Fear and Hope Emerge from Anticipation in Model-Based Reinforcement Learning :: Thomas Moerland, Joost Broekens and Catholijn Jonker
		910 :: Sequential Plan Recognition :: Reuth Mirsky, Kobi Gal, Roni Stern and Meir Kalech
		1852 :: A Discriminative Approach to Grounded Natural Language Learning in Interactive Robotics :: Emanuele Bastianelli, Danilo Croce, Andrea Vanzo, Roberto Basili and Daniele Nardi
		626 :: POISketch: Semantic Place Labeling over User Activity Streams :: Dingqi Yang, Bin Li and Philippe Cudré-Mauroux

15:10–16:35		
PLACE	SESSION	TALK
Gibson Suite	Combinatorial & Heuristic Search1 :: Heuristic Search and Combinatorial Optimization	236 :: Fast Solving Maximum Weight Clique Problem in Massive Graphs :: Shaowei Cai and Jinkun Lin
		1227 :: Improved Heuristic and Tie-Breaking for Optimally Solving Sokoban :: André Grahl Pereira, Robert Holte, Jonathan Schaeffer, Luciana Salete Buriol and Marcus Ritt
		210 :: FastLCD: Fast Label Coordinate Descent for the Optimization of MRFs with Two-Dimensional Labels :: Kangwei Liu, Junge Zhang, Peipei Yang and Kaiqi Huang
		1358 :: An Approximation Approach for Solving Subpath Planning Problem :: Masoud Safilian, S. Mehdi Hashemi, Sepehr Eghbali and Ali Akbar Safilian
		2646 :: Improved Bounded-Suboptimal Multi-Agent Path Finding Solvers :: Liron Cohen, T. K. Satish Kumar, Tansel Uras, Hong Xu, Nora Ayanian and Sven Koenig
		2566 :: Scalable Segment Abstraction Method for Advertising Campaign Admission and Inventory Allocation Optimization :: Fei Peng and Tuomas Sandholm
		2833 :: Demand Prediction and Placement Optimization for Electric Vehicle Charging Stations :: Ragavendran Gopalakrishnan, Arpita Biswas, Alefiya Lightwala, Skanda Vasudevan, Partha Dutta and Abhishek Tripathi
Sutton Center	Natural Language Processing1 :: Information Extraction	1442 :: Hashtag Recommendation using Attention-based Convolutional Neural Network :: Yeyun Gong and Qi Zhang
		1444 :: Joint Models for Extracting Adverse Drug Events from Biomedical Text :: Fei Li, Yue Zhang, Meishan Zhang and Donghong Ji
		1634 :: A Joint Model of Intent Determination and Slot Filling for Spoken Language Understanding :: Xiaodong Zhang, Houfeng Wang, Yang Liu and Xu Sun
		362 :: Knowledge Representation Learning with Entities, Attributes and Relations :: Yankai Lin, Zhiyuan Liu and Maosong Sun
		946 :: Neural Segmentation Models Leveraging Segment Representations :: Yijia Liu, Wanxiang Che, Jiang Guo, Bing Qin and Ting Liu
		538 :: Building Joint Spaces for Relation Extraction :: Chang Wang, Liangliang Cao and James Fan
		2663 :: Recognizing Opinion Sources Based on A New Categorization of Opinion Types :: Lingjia Deng and Janyce Wiebe

17:05–18:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems3 :: Social Choice Theory2	1067 :: Complexity of Manipulation with Partial Information :: Palash Dey, Neeldhara Misra and Narahari Yadati
		1312 :: Strategic Voting with Incomplete Information :: Ulle Endriss, Svetlana Obraztsova, Maria Polukarov and Jeffrey S. Rosenschein
		1368 :: Randomized Social Choice Functions Under Metric Preferences :: Elliot Anshelevich and John Postl
		1622 :: How Hard Is It for a Party to Nominate an Election Winner? :: Piotr Faliszewski, Laurent Gourvès, Jérôme Lang, Julien Lesca and Jérôme Monnot
		1184 :: Optimally Protecting Elections :: Yue Yin, Yevgeniy Vorobeychik, Bo An and Noam Hazon
Madison Suite	Machine Learning2 :: Semi-Supervised Learning	1458 :: Robust Out-of-Sample Data Representation :: Bo Jiang, Chris Ding and Bin Luo
		2073 :: Efficient Collaborative Filtering with Side Information :: Feipeng Zhao and Yuhong Guo
		677 :: Parameter-free Auto-weighted Multiple Graph Learning: A Framework for Clustering and Semi-supervised Classification :: Feiping Nie, Jing Li and Xuelong Li
Clinton Suite	Planning and Scheduling3 :: Planning under Uncertainty1	943 :: Modularity based Community Detection with Deep Learning :: Liang Yang, Xiaochun Cao, Dongxiao He, Chuan Wang, Xiao Wang and Weixiong Zhang
		2678 :: Transfer Learning with Active Queries from Source Domain :: Sheng-Jun Huang and Songcan Chen
		2312 :: Which Contingent Events to Observe for the Dynamic Controllability of a Plan :: Arthur Bit-Monnot, Malik Ghallab and Felix Ingrand
		1987 :: PAC Greedy Maximisation with Efficient Bounds on Information Gain for Sensor Selection. :: Yash Satsangi, Shimon Whiteson and Frans Oliehoek
		2295 :: Planning for a Single Agent in a Multi-Agent Environment Using FOND :: Christian Muise, Paolo Felli, Tim Miller, Adrian Pearce and Liz Sonenberg
		2779 :: Robust Repositioning to Counter Unpredictable Demand in Bike Sharing Systems :: Supriyo Ghosh, Michael Trick and Pradeep Varakantham
		1288 :: Hierarchical Approach to Transfer of Control in Semi-Autonomous Systems :: Kyle Wray, Luis Pineda and Shlomo Zilberstein

17:05–18:05		
PLACE	SESSION	TALK
Sutton North	Human-Aware AI (IJCAI-16 Theme)2 :: Planning and Decision Support for Human-Machine Teams	2594 :: Apprenticeship Scheduling: Learning to Schedule from Human Experts :: Matthew Gombolay, Reed Jensen, Jessica Stigile, Sung-Hyun Son and Julie Shah
		799 :: Incorporating User Preferences in Predictive Models Via Structured Regularizers :: Suchi Saria and Daniel Robinson
		1256 :: Interactive Scheduling of Appliance Usage in the Home :: Ngoc Cuong Truong, Tim Baarslag, Sarvapali Ramchurn and Long Tran-Thanh
		750 :: Mutual Influence Potential Networks: Enabling Information Sharing in Loosely-Coupled Extended-Duration Teamwork :: Ofra Amir, Barbara Grosz and Krzysztof Gajos
		2032 :: A Polynomial Time Optimal Algorithm for Robot-Human Search under Uncertainty :: Shaofei Chen, Tim Baarslag, Dengji Zhao, Jing Chen and Lincheng Shen
Gibson Suite	Combinatorial & Heuristic Search2 :: Applications	2228 :: Exploiting Problem Structure in Combinatorial Landscapes: A Case Study on Pure Mathematics Application :: Xiao-Feng Xie and Zun-Jing Wang
		235 :: Adaptive budget allocation for maximizing influence of advertisements :: Daisuke Hatano, Takuro Fukunaga and Ken-Ichi Kawarabayashi
		830 :: Asymptotic Optimality of Myopic Optimization in Trial-Offer Markets with Social Influence :: Andres Abeliuk, Gerardo Berbeglia, Felipe Maldonado and Pascal Van Hentenryck
		798 :: Online Multi-object Tracking by Quadratic Pseudo-Boolean Optimization :: Long Lan, Dacheng Tao, Chen Gong, Naiyang Guan and Zhigang Luo
		1692 :: A branch-and-price algorithm for scheduling observations on a telescope :: Nicolas Catusse, Hadrien Cambazar, Nadia Brauner, Pierre Lemaire, Bernard Penz, Anne-Marie Lagrange and Pascal Rubini
Sutton Center	Natural Language Processing2 :: Natural Language Generation	29 :: Generating Recommendation Evidence using Translation Model :: Jizhou Huang, Shiqi Zhao, Shiqiang Ding, Haiyang Wu, Mingming Sun and Haifeng Wang
		1715 :: i, Poet: Automatic Poetry Composition through Recurrent Neural Networks with Iterative Polishing Schema :: Rui Yan
		144 :: WikiWrite: Generating Wikipedia Articles Automatically :: Siddhartha Banerjee and Prasenjit Mitra
		1820 :: Chinese Song Iambics Generation with Neural Attention-based Model :: Qixin Wang, Tianyi Luo, Dong Wang and Chao Xing
		1658 :: Robust Natural Language Processing - Combining Reasoning, Cognitive Semantics and Construction Grammar for Spatial Language :: Michael Spranger, Jakob Suchan and Mehul Bhatt

08:30–09:55		
PLACE	SESSION	TALK
Clinton Suite	Robotics and Vision2 :: Vision and Perception2	2642 :: Learning to Order Objects using Haptic and Proprioceptive Exploratory Behaviors :: Jivko Sinapov, Priyanka Khante, Maxwell Svetlik and Peter Stone
		964 :: A Framework for Integrating Symbolic and Sub-symbolic Representations :: Keith Clark, Bernhard Hengst, Maurice Pagnucco, David Rajaratnam, Peter Robinson, Claude Sammut and Michael Thielscher
		961 :: A Stochastic Grammar for Fine-grained 3D Scene Reconstruction :: Xiaobai Liu, Yadong Mu and Liang Lin
		1904 :: Scene Text Detection in Video by Learning Locally and Globally :: Wei-Yi Pei, Shu Tian and Xu-Cheng Yin
		650 :: What are Where: Inferring Containment Relations from Videos :: Wei Liang, Yixin Zhu and Songchu Zhu
		831 :: Learning Interactive Affordance for Human-Robot Interaction :: Tianmin Shu, Michael S. Ryoo and Song-Chun Zhu
Madison Suite	Knowledge Representation, Reasoning, and Logic3 :: Computational Complexity of Reasoning	1130 :: Model-based Deep Hand Pose Estimation :: Xingyi Zhou, Qingfu Wan, Wei Zhang, Xiangyang Xue and Yichen Wei
		345 :: Query answering with transitive and linear-ordered data :: Antoine Amarilli, Michael Benedikt, Pierre Bourhis and Michael Vanden Boom
		734 :: First Order-Rewritability of Conjunctive Queries in Horn Description Logics :: Meghyn Bienvenu, Peter Hansen, Carsten Lutz and Frank Wolter
		1109 :: Query Entailment and Inseparability for ALC Ontologies :: Elena Botoeva, Carsten Lutz, Vladislav Ryzhikov, Frank Wolter and Michael Zakharyashev
		1228 :: Query-driven Repairing of Inconsistent DL-Lite Knowledge Bases :: Meghyn Bienvenu, Camille Bourgaux and François Goasdoué
		1703 :: Optimal Status Enforcement in Abstract Argumentation :: Andreas Niskanen, Johannes P. Wallner and Matti Järvisalo
		1126 :: Querying Data Graphs with Arithmetical Regular Expressions :: Maciej Graboń, Jakub Michaliszyn, Jan Otop and Piotr Wieczorek
		2011 :: Verifying existence of resource-bounded coalition uniform strategies :: Natasha Alechina, Mehdi Dastani and Brian Logan

08:30–09:55		
PLACE	SESSION	TALK
Beekman Parlor	Machine Learning3 :: Feature Selection/Construction1	1213 :: Direct Sparsity Optimization Based Feature Selection for Multi-Class Classification :: Hanyang Peng and Yong Fan
		16 :: Fast Laplace Approximation for Sparse Bayesian Spike and Slab Models :: Syed Abbas Zilqurnain Naqvi, Shandian Zhe, Yuan Qi and Jieping Ye
		38 :: Avoiding Optimal Mean Robust PCA/2DPCA with Non-greedy L1-norm Maximization :: Minnan Luo, Feiping Nie, Xiaojun Chang, Yi Yang and Qinghua Zheng
		266 :: Multi-Label Informed Feature Selection :: Ling Jian, Jundong Li, Kai Shu and Huan Liu
		565 :: Non-negative Matrix Factorization with Sinkhorn Distance :: Wei Qian, Bin Hong, Deng Cai, Xiaofei He and Xuelong Li
		948 :: Gated Probabilistic Matrix Factorization: Learning Users' Attention from Missing Values :: Shohei Ohsawa, Yachiko Obara and Takayuki Osogami
		1043 :: A Novel Feature Matching Strategy for Large Scale Image Retrieval :: Hao Tang and Hong Liu
Sutton North	Machine Learning4 :: Multi-instance/Multi-label/ Multi-view learning	96 :: Coordinate Discrete Optimization for Efficient Cross-View Image Retrieval :: Zongting Lv, Yadong Mu, Wei Liu, Cheng Deng and Xinbo Gao
		863 :: Learning by Actively Querying Strong Modal Features :: Yang Yang, De-Chuan Zhan and Yuan Jiang
		1383 :: Learning Cross-view Binary Identities for Fast Person Re-identification :: Feng Zheng and Ling Shao
		1840 :: Multi-view Learning with Limited and Noisy Tagging :: Yingming Li, Ming Yang, Zenglin Xu and Zhongfei Zhang
		90 :: Multi-view Exclusive Unsupervised Dimension Reduction for Video-based Facial Expression Recognition :: Liping Xie, Dacheng Tao and Haikun Wei
		1416 :: On Combining Side Information and Unlabeled Data for Heterogeneous Multi-task Metric Learning :: Yong Luo, Yonggang Wen and Dacheng Tao
		1595 :: A Unifying Framework for Learning Bag Labels from Generalized Multiple-Instance Data :: Gary Doran, Andrew Latham and Soumya Ray

08:30–09:55		
PLACE	SESSION	TALK
Gibson Suite	Machine Learning5 :: Unsupervised Learning1	45 :: Linear-time Outlier Detection via Sensitivity :: Mario Lucic, Olivier Bachem and Andreas Krause
		186 :: Deep Subspace Clustering with Sparsity Prior :: Xi Peng, Shijie Xiao, Jiashi Feng, Wei-Yun Yau and Zhang Yi
		273 :: A Unified Framework for Discrete Spectral Clustering :: Yang Yang, Fumin Shen, Zi Huang and Heng Tao Shen
		453 :: Group-Invariant Cross-Modal Subspace Learning :: Jian Liang, Ran He, Zhenan Sun and Tieniu Tan
		630 :: Large Scale Sparse Clustering :: Ruqi Zhang and Zhiwu Lu
		848 :: Fast Robust Non-negative Matrix Factorization for Large Scale Data Clustering :: De Wang, Feiping Nie and Heng Huang
		136 :: Iterative Views Agreement: An Iterative Low-Rank based Structured Optimization Method to Multi-View Spectral Clustering :: Yang Wang and Lin Wu
Sutton Center	AI and the Web3 :: Mining user-generated data on the Web	139 :: Collaborative Evolution for User Profiling in Recommender Systems :: Zhongqi Lu, Sinno Jialin Pan, Yong Li, Jie Jiang and Qiang Yang
		571 :: Weakly-supervised Deep Learning for Customer Review Sentiment Classification :: Ziyu Guan, Long Chen, Wei Zhao, Yi Zheng, Shulong Tan and Deng Cai
		2624 :: Matching via Dimensionality Reduction for Estimation of Treatment Effects in Digital Marketing Campaigns :: Sheng Li, Nikos Vlassis, Jaya Kawale and Yun Fu
		1764 :: Inferring Motif-Based Diffusion Models for Social Networks :: Qing Bao, William Kwok Wai Cheung and Jiming Liu
		2448 :: Content-driven Detection of Cyberbullying on the Instagram Social Network :: Haoti Zhong, Hao Li, Anna Squicciarini, Sarah Rajtmajer, Christopher Griffin, David Miller and Cornelia Caragea
		2331 :: Domain adaptation for learning from label proportions using self-training :: Ehsan Mohammady Ardehaly and Aron Culotta
		2795 :: Detecting Rumors from Microblogs with Recurrent Neural Networks :: Jing Ma, Wei Gao, Prasenjit Mitra, Sejeong Kwon, Bernard J. Jansen, Kam-Fai Wong and Meeyoung Cha

10:05–11:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems4 :: Social Choice Theory3	1626 :: Committee Scoring Rules: Axiomatic Classification and Hierarchy :: Piotr Faliszewski, Piotr Skowron, Arkadii Slinko and Nimrod Talmon
		2318 :: Misrepresentation in District Voting :: Yoad Lewenberg, Yoram Bachrach, Yair Zick and Omer Lev
		2341 :: Conditional and Sequential Approval Voting on Combinatorial Domains :: Nathanaël Barrot and Jérôme Lang
		1282 :: Social Choice for Agents with General Utilities :: Hongyao Ma, Reshef Meir and David C. Parkes
		2338 :: Trembling Hand Equilibria of Plurality Voting :: Svetlana Obraztsova, Zinovi Rabinovich, Edith Elkind, Maria Polukarov and Nick Jennings
Madison Suite	Uncertainty in AI2 :: Sequential Decision Making	2494 :: Approximating Value Equivalence in Interactive Dynamic Influence Diagrams Using Behavioral Coverage :: Ross Conroy, Yifeng Zeng and Jing Tang
		2174 :: Sum-Product-Max Networks for Tractable Decision Making :: Mazen Melibari, Pascal Poupart and Prashant Doshi
		2460 :: A POMDP Approach to Influence Diagram Evaluation :: Eric Hansen, Jinchuan Shi and Arindam Khaled
		791 :: Factored Probabilistic Belief Tracking :: Blai Bonet and Hector Geffner
		1276 :: Efficient Bayesian Clustering for Reinforcement Learning :: Travis Mandel, Yun-En Liu, Emma Brunskill and Zoran Popovic
Clinton Suite	Planning and Scheduling4 :: Theoretical Foundations of Planning	1996 :: Graph-Based Factorization of Classical Planning Problems :: Martin Wehrle, Silvan Sievers and Malte Helmert
		1990 :: In Search of Tractability for Partial Satisfaction Planning :: Michael Katz and Vitaly Mirkis
		2884 :: Decision Procedure for a Fragment of Linear Time Mu-Calculus :: Yao Liu, Zhenhua Duan and Cong Tian
		1076 :: Correlation Complexity of Classical Planning Domains :: Jendrik Seipp, Florian Pommerening, Gabriele Röger and Malte Helmert
		2588 :: Hierarchical Planning: Relating Task and Goal Decomposition with Task Sharing :: Ron Alford, Vikas Shivashankar, Mark Roberts, Jeremy Frank and David Aha

10:05–11:05		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications3 :: Personalization and User Modeling	523 :: MPMA: Mixture Probabilistic Matrix Approximation for Collaborative Filtering :: Chao Chen, Dongsheng Li, Qin Lv, Junchi Yan, Stephen Chu and Li Shang
		1181 :: Rating-Boosted Latent Topics: Understanding Users and Items with Ratings and Reviews :: Yunzhi Tan, Min Zhang, Yiqun Liu and Shaoping Ma
		1862 :: Personalizing EEG-based Affective Models with Transfer Learning :: Wei-Long Zheng and Bao-Liang Lu
		1485 :: Browsing Regularities in Hedonic Content Systems: the More the Merrier? :: Ping Luo, Ganbin Zhou and Qing He
		470 :: Sparse Bayesian Content-Aware Collaborative Filtering for Implicit Feedback :: Defu Lian, Yong Ge, Nicholas Jing Yuan, Xing Xie and Hui Xiong
Gibson Suite	Constraints & Satisfiability3	89 :: Improving Model Counting by Leveraging Definability :: Jean Marie Lagniez, Emmanuel Lonca and Pierre Marquis
		963 :: Preserving Privacy in Region Optimal DCOP Algorithms :: Tamir Tassa, Roie Zivan and Tal Grinshpoun
		1915 :: A Clause Tableaux Calculus for MaxSAT :: Chu-Min Li, Felip Manyà and Joan Ramon Soler
		2435 :: Ranking Constraints :: Christian Bessiere, Emmanuel Hebrard, George Katsirelos, Zeynep Kiziltan and Toby Walsh
		296 :: Constraint Answer Set Programming versus Satisfiability Modulo Theories Or Constraints versus Theories :: Yuliya Lierler and Benjamin Susman
Sutton Center	Natural Language Processing3	46 :: Employing External Rich Knowledge for Machine Comprehension :: Bingning Wang, Kang Liu and Jun Zhao
		438 :: Unsupervised Word and Dependency Path Embeddings for Aspect Term Extraction :: Yichun Yin, Furu Wei, Li Dong, Kaimeng Xu, Ming Zhang and Ming Zhou
		655 :: Agreement-based Joint Training for Bidirectional Attention-based Neural Machine Translation :: Yong Cheng, Shiqi Shen, Zhongjun He, Wei He, Hua Wu, Maosong Sun and Yang Liu
		868 :: A Neural Network for Document Summarization :: Qian Chen, Xiaodan Zhu, Zhenhua Ling, Si Wei and Hui Jiang
		1102 :: Recurrent Neural Network for Text Classification with Multi-Task Learning :: Pengfei Liu, Xipeng Qiu and Xuanjing Huang

11:35–12:35		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems5 :: Social Choice Theory4	2557 :: Correlated Voting :: Debmalya Mandal and David Parkes
		1289 :: Robust Draws in Balanced Knockout Tournaments :: Krishnendu Chatterjee, Rasmus Ibsen-Jensen and Josef Tkadlec
		2385 :: Achieving proportional representation in conference programs :: Ioannis Caragiannis, Laurent Gourves and Jerome Monnot
		1480 :: A Characterization of Voting Power for Discrete Weight Distributions :: Yoram Bachrach, Yuval Filmus, Joel Oren and Yair Zick
		691 :: A network-based rating system and its resistance to bribery :: Umberto Grandi and Paolo Turrini
Madison Suite	Knowledge Representation, Reasoning, and Logic4 :: Geometric, Spatial, and Temporal Reasoning	2303 :: Temporal and Spatial OBDA with Many-Dimensional Halpern-Shoham Logic :: Roman Kontchakov, Laura Pandolfo, Luca Pulina, Vladislav Ryzhikov and Michael Zakharyashev
		2543 :: Temporalized EL Ontologies for Accessing Temporal Data: Complexity of Atomic Queries :: Victor Gutiérrez Basulto, Jean Christoph Jung and Roman Kontchakov
		1884 :: Connecting Qualitative Spatial and Temporal Representations by Propositional Closure :: Diedrich Wolter and Jae Hee Lee
		2820 :: Efficient Path Consistency Algorithm for Large Qualitative Constraint Networks :: Zhiguo Long, Michael Sioutis and Sanjiang Li
		2185 :: On Logics of Strategic Ability based on Propositional Control :: Francesco Belardinelli and Andreas Herzig
Clinton Suite	Planning and Scheduling5 :: Planning Algorithms	1802 :: Decoupled Strong Stubborn Sets :: Daniel Gnad, Martin Wehrle and Jörg Hoffmann
		1908 :: Structural Symmetries for Fully Observable Nondeterministic Planning :: Dominik Winterer, Martin Wehrle and Michael Katz
		1941 :: On State-Dominance Criteria in Fork-Decoupled Search :: Álvaro Torralba, Daniel Gnad, Patrick Dubbert and Joerg Hoffmann
		1947 :: Abstraction Heuristics for Symbolic Bidirectional Search :: Álvaro Torralba, Carlos Linares Lopez and Daniel Borrajo
		2568 :: Hierarchical Model Predictive Control for Navigation of Multi-Robot Systems :: Chao Huang, Xin Chen, Yifan Zhang, Xuandong Li, Shengchao Qin and Yifeng Zeng

11:35–12:35		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications4 :: Computational Biology and e-Health	2617 :: Sequential planning for steering immune system adaptation :: Christian Kroer and Tuomas Sandholm
		755 :: Baseline Regularization for Computational Drug Repositioning with Longitudinal Observational Data :: Zhaobin Kuang, James Thomson, Michael Caldwell, Peggy Peissig, Ron Stewart and C. David Page
		1180 :: Protein Secondary Structure Prediction Using Cascaded Convolutional and Recurrent Neural Networks :: Zhen Li and Yizhou Yu
		1170 :: Rule-Based Programming of Molecular Robot Swarms for Biomedical Applications :: Inbal Wiesel, Gal A. Kaminka, Noa Agmon, Ido Bachelet and Guy Hachmon
		1435 :: Coordinating Human-UAV Teams in Disaster Response :: Feng Wu and Sarvapali Ramchurn
Gibson Suite	Constraints & Satisfiability4	2283 :: Linear Arithmetic Satisfiability via Strategy Improvement :: Azadeh Farzan and Zachary Kincaid
		927 :: Distributed Breakout: Beyond Satisfaction :: Steven Okamoto, Roie Zivan and Aviv Nahon
		1392 :: Relevance for SAT(ID) :: Joachim Jansen, Bart Bogaerts, Jo Devriendt, Gerda Janssens and Marc Denecker
		2612 :: Mission Oriented Robust Multi-Team Formation and its Application to Robot Rescue Simulation :: Tenda Okimoto, Tony Ribeiro, Damien Bouchabou and Katsumi Inoue
		738 :: Proving the Incompatibility of Efficiency and Strategyproofness via SMT Solving :: Florian Brandl, Felix Brandt and Christian Geist
Sutton Center	Natural Language Processing4	2450 :: Tree-state based Rule Selection Models for Hierarchical Phrase-based Machine Translation :: Shujian Huang, Huifeng Sun, Chengqi Zhao, Jinsong Su, Xinyu Dai and Jiajun Chen
		1583 :: A Bilingual Graph-based Semantic Model for Statistical Machine Translation :: Rui Wang, Hai Zhao, Sabine Ploux, Bao-Liang Lu and Masao Utiyama
		1621 :: Intersubjectivity and Sentiment: from Language to Knowledge :: Lin Gui, Ruifeng Xu, Yulan He, Qin Lu and Zhongyu Wei
		1759 :: Automatic Construction and Evaluation of a Large Semantically Enriched Wikipedia :: Alessandro Raganato, Claudio Delli Bovi and Roberto Navigli
		2282 :: StalemateBreaker: A Proactive Content Introducing Approach for Automatic Human-Computer Conversation :: Xiang Li, Rui Yan, Lili Mou and Ming Zhang

15:10–16:35		
PLACE	SESSION	TALK
Clinton Suite	Robotics and Vision3	167 :: Robust Iterative Quantization for Efficient ℓ_{p} -norm Similarity Search :: Yuchen Guo, Guiguang Ding and Jungong Han
		704 :: Visual Tracking with Reliable Memories :: Shu Wang, Shaoting Zhang, Wei Liu and Dimitris Metaxas
		721 :: Robust Joint Discriminative Feature Learning for Visual Tracking :: Xiangyuan Lan, Shengping Zhang and Pong Chi Yuen
		2277 :: Synthesizing Robotic Handwriting Motion by Learning from Human Demonstrations :: Hang Yin, Patricia Alves-Olivera, Francesco S. Melo, Aude Billard and Ana Paiva
		2629 :: Learning Multi-Modal Grounded Linguistic Semantics by Playing I, Spy :: Jesse Thomason, Jivko Sinapov, Maxwell Svetlik, Peter Stone and Raymond Mooney
		524 :: Clustering-based Joint Feature Selection for Semantic Attribute Prediction :: Lin Chen and Baoxin Li
		744 :: Incomplete Multimodal Visual Data Grouping :: Handong Zhao, Hongfu Liu and Yun Fu
Madison Suite	Knowledge Representation, Reasoning, and Logic5 :: Knowledge Representation Languages	2644 :: Expressive Completeness of Existential Rule Languages for Ontology-based Query Answering :: Heng Zhang, Yan Zhang and Jia-Huai You
		1848 :: Equivalent Stream Reasoning Programs :: Harald Beck, Minh Dao-Tran and Thomas Eiter
		2291 :: A Characterization of the Semantics of Logic Programs with Aggregates :: Yuanlin Zhang and Maede Rayatidamavandi
		2368 :: Answering metaqueries over Hi(OWL 2 QL) ontologies :: Maurizio Lenzerini, Lorenzo Lepore and Antonella Poggi
		555 :: Forgetting Concept and Role Symbols in $\text{ALCOIHmu+(top, and, or)-Ontologies}$:: Yizheng Zhao and Renate A. Schmidt
		1309 :: Polynomial Datalog Rewritings for Expressive Description Logics with Closed Predicates :: Shqiponja Ahmetaj, Magdalena Ortiz and Mantas Simkus
		1887 :: Ontology-Mediated Queries Distributing Over Components :: Gerald Berger and Andreas Pieris

15:10–16:35		
PLACE	SESSION	TALK
Beekman Parlor	Machine Learning6 :: Classification1	63 :: Bernoulli Random Forests: Closing the Gap between Theoretical Consistency and Empirical Soundness :: Yisen Wang, Qingtao Tang, Shu-Tao Xia, Jia Wu and Xingquan Zhu
		643 :: A Self-representation induced Classifier :: Pengfei Zhu, Lei Zhang, Wangmeng Zuo, Xiangchu Feng and Qinghua Hu
		800 :: Object Recognition with Hidden Attributes :: Xiaoyang Wang and Qiang Ji
		1898 :: Sparsity Conditional Energy Label Distribution Learning for Age Estimation :: Xu Yang, Xin Geng and De-Yu Zhou
		1986 :: Dynamic Early Stopping for Naive Bayes :: Aäron Verachtert, Jesse Davis and Hendrik Blockeel
		2639 :: A Distributed Large Scale Machine Learning Mechanism for Least Square Problems :: Hongliang Guo and Jie Zhang
		586 :: Self-Paced Boost Learning for Classification :: Te Pi, Xi Li, Zhongfei Zhang, Deyu Meng, Fei Wu, Jun Xiao and Yueting Zhuang
Sutton North	Machine Learning7 :: Transfer, Adaptation, Multi-task Learning	822 :: Deep Nonlinear Feature Coding for Unsupervised Domain Adaptation :: Pengfei Wei, Yiping Ke and Chi Keong Goh
		835 :: Nonparametric Risk and Stability Analysis for Multi-Task Learning Problems :: Xuezhi Wang, Junier Oliva, Jeff Schneider and Barnabas Poczos
		1555 :: Supervised Heterogeneous Domain Adaptation via Random Forests :: Sanatan Sukhija, Narayanan C Krishnan and Gurkanwal Singh
		1985 :: Transfer Hashing with Privileged Information :: Joey Tianyi Zhou, Xinxing Xu, Sinno Jialin Pan, Ivor Tsang, Qin Zheng and Rick Siow Mong Goh
		301 :: Theoretically-Grounded Policy Advice from Multiple Teachers in Reinforcement Learning Settings with Applications to Negative Transfer :: Yusen Zhan, Haitham Bou Ammar and Matthew Taylor
		952 :: Geometric Scene Parsing with Hierarchical LSTM :: Zhanglin Peng, Ruimao Zhang, Xiaodan Liang, Liang Lin and Xiaobai Liu
		1021 :: Self-Adapted Multi-task Clustering :: Xianchao Zhang, Xiaotong Zhang and Han Liu

15:10–16:35		
PLACE	SESSION	TALK
Gibson Suite	Machine Learning8 :: Data Mining	402 :: Collaborative Filtering with Generalized Laplacian Constraint via Overlapping Decomposition :: Qing Zhang and Houfeng Wang
		1497 :: Predict Anchor Links across Social Networks via an Embedding Approach :: Tong Man, Huawei Shen, Shenghua Liu, Xiaolong Jin and Xueqi Cheng
		1597 :: Subspace Clustering via New Discrete Group Structure Constrained Low-Rank Model :: Feiping Nie and Heng Huang
		1698 :: Semi-Data-Driven Network Coarsening :: Li Gao, Jia Wu, Hong Yang, Zhi Qiao, Chuan Zhou and Yue Hu
		440 :: Dependency Clustering of Mixed Data with Gaussian Mixture Copulas :: Vaibhav Rajan and Sakyajit Bhattacharya
		1372 :: Change Detection in Multivariate Datastreams: Likelihood and Detectability Loss :: Cesare Alippi, Giacomo Boracchi, Diego Carrera and Manuel Roveri
		1373 :: Identifying Outliers in Complex Categorical Data by Modeling the Feature Value Couplings :: Guansong Pang, Longbing Cao and Ling Chen
Sutton Center	AI and the Web4	10 :: Questimator: Generating Knowledge Assessments for Arbitrary Topics :: Qi Guo, Chinmay Kulkarni, Aniket Kittur, Jeffrey Bigham and Emma Brunskill
		196 :: Cross-media Shared Representation by Hierarchical Learning with Multiple Deep Networks :: Yuxin Peng, Xin Huang and Jinwei Qi
		211 :: HIEDS: A Generic and Efficient Approach to Hierarchical Dataset Summarization :: Gong Cheng, Cheng Jin and Yuzhong Qu
		502 :: ATUCAPTS: Automated Tests That a User Cannot Pass Twice Simultaneously :: Garrett Andersen and Vincent Conitzer
		766 :: Timeline Summarization with Life Cycle Models :: Yi Chang, Jiliang Tang, Dawei Yin and Yan Liu
		872 :: Dynamic Task Allocation Algorithm for Hiring Workers that Learn :: Shengying Pan, Kate Larson, Josh Bradshaw and Edith Law
		1015 :: Causality based Propagation History Ranking in Social Networks :: Zheng Wang, Chaokun Wang, Jisheng Pei, Xiaojun Ye and Philip S. Yu

17:05–18:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems6 :: Auctions, Mechanism Design and Market-Based Systems1	1925 :: Core-Selecting Payment Rules for Combinatorial Auctions with Uncertain Availability of Goods :: Dmitry Moor, Tobias Grubenmann, Sven Seuken and Abraham Bernstein
		919 :: Dynamic Auctions with Bank Accounts :: Vahab Mirrokni, Renato Paes Leme, Pingzhong Tang and Song Zuo
		2399 :: Trading On A Rigged Game: Outcome Manipulation In Prediction Markets :: Mithun Chakraborty and Sanmay Das
		2021 :: Incentivizing Reliability in Demand-Side Response :: Hongyao Ma, Valentin Robu, Na Li and David C. Parkes
		735 :: An Online Mechanism for Ridesharing in Autonomous Mobility-on-Demand Systems :: Wen Shen, Cristina V. Lopes and Jacob W. Crandall
Madison Suite	Uncertainty in AI3	2484 :: Probabilistic Inference Modulo Theories :: Rodrigo de Salvo Braz, Ciaran O'Reilly, Vibhav Gogate and Rina Dechter
		2315 :: Solving M-Modes Using Heuristic Search :: Cong Chen, Changhe Yuan and Chao Chen
		1041 :: Stochastic And-Or Grammars: A Unified Framework and Logic Perspective :: Kewei Tu
Clinton Suite	Planning and Scheduling6 :: Planning (General/other)1	1264 :: Bayesian Dictionary Learning with Gaussian Processes and Sigmoid Belief Networks :: Yizhe Zhang, Ricardo Henao, Chunyuan Li and Lawrence Carin
		2243 :: Constructive Preference Elicitation by Setwise Max-margin Learning :: Stefano Teso, Andrea Passerini and Paolo Viappiani
		2902 :: Hierarchical Finite State Controllers for Generalized Planning :: Javier Segovia, Sergio Jimenez and Anders Jonsson :: Distinguished Paper
		2392 :: Co-Optimization Multi-Agent Placement with Task Assignment and Scheduling :: Chongjie Zhang and Julie Shah
		2881 :: Automatic Generation of High-Level State Features for Generalized Planning :: Damir Lotinac, Javier Segovia, Sergio Jimenez and Anders Jonsson
		683 :: Maintaining Evolving Domain Models :: Daniel Bryce, J. Benton and Michael Boldt
		1581 :: Heuristics for Numeric Planning via Subgoalng :: Enrico Scala, Patrik Haslum and Sylvie Thiebaux

Wednesday, July 13

17:05–18:05		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications5	350 :: Balancing Appearance and Context in Sketch Interpretation :: Randall Davis, Yale Song, Kaichen Ma and Dana L. Penney
		603 :: Word Clouds with Latent Variable Analysis for Visual Comparison of Documents :: Tuan Le and Hady Lauw
		817 :: Action Selection of Hammer Shots in Curling :: Zaheen Farraz Ahmad, Robert Holte and Michael Bowling
		2649 :: Question Answering via Integer Programming over Semi-Structured Knowledge :: Daniel Khashabi, Tushar Khot, Ashish Sabharwal, Peter Clark, Oren Etzioni and Dan Roth
		2080 :: Learning Unified Features from Natural and Programming Languages for Locating Buggy Source Codes :: Xuan Huo, Ming Li and Zhi-Hua Zhou
Gibson Suite	Combinatorial & Heuristic Search3	32 :: Markov Chain Analysis of Noise and Restart in Stochastic Local Search :: Ole Mengshoel, Youssef Ahres and Tong Yu
		902 :: External Memory Bidirectional Search :: Nathan Sturtevant and Jingwei Chen
		1054 :: Natural Supervised Hashing :: Qi Liu and Hongtao Lu
		1966 :: Counting Linear Extensions of Sparse Posets :: Juho-Kustaa Kangas, Teemu Hankala, Teppo Niinimäki and Mikko Koivisto
		2260 :: Comparing Search Algorithms using Sorting and Hashing on Disk and in Memory :: Richard Korf
Sutton Center	Machine Learning9 :: Reinforcement Learning	412 :: Hidden Parameter Markov Decision Processes: A Semiparametric Regression Approach for Discovering Latent Task Parametrizations :: Finale Doshi-Velez and George Konidaris
		1402 :: Incremental Truncated LSTD :: Clement Gehring, Yangchen Pan and Martha White
		1697 :: Policy Search in Reproducing Kernel Hilbert Space :: Vien Ngo, Peter Englert and Marc Toussaint
		2561 :: Constructing Abstraction Hierarchies Using a Skill-Symbol Loop :: George Konidaris
		1310 :: Using Task Features for Zero-Shot Knowledge Transfer in Lifelong Learning :: David Isele, Mohammad Rostami, and Eric Eaton :: Distinguished Student Paper

Thursday, July 14

08:30–09:55		
PLACE	SESSION	TALK
Clinton Suite	Robotics and Vision4	1254 :: Enforcing Template Representability and Temporal Consistency for Adaptive Sparse Tracking :: Xue Yang, Fei Han, Hua Wang and Hao Zhang
		2264 :: Making Robots Proactive through Equilibrium Maintenance :: Jasmin Grosinger, Federico Pecora and Alessandro Saffiotti
		2426 :: Learning to Detect Concepts from Webly-Labeled Video Data :: Junwei Liang, Lu Jiang, Deyu Meng and Alexander Hauptmann
		2771 :: Discriminative Log-Euclidean Feature Learning for Sparse Representation-Based Recognition of Faces from Videos :: Mohammed E. Fathy, Azadeh Alavi and Rama Chellappa
		2526 :: Object-based World Modeling in Semi-Static Environments with Dependent Dirichlet Process Mixtures :: Lawson L.S. Wong, Thanard Kurutach, Tomas Lozano-Perez and Leslie Pack Kaelbling
Madison Suite	Knowledge Representation, Reasoning, and Logic6 :: Logic Programming	1474 :: Unsupervised Alignment of Actions in Video with Text Descriptions :: Young Chol Song, Iftekhar Naim, Abdullah Al Mamun, Kaustubh Kulkarni, Parag Singla, Jiebo Luo, Daniel Gildea and Henry Kautz
		146 :: Diversely Image Captioning via GroupTalk :: Zhuhao Wang, Fei Wu, Jun Xiao, Xi Li, Zitong Zhang and Yueting Zhuang
		1096 :: Knowledge-based Sequence Mining with ASP :: Martin Gebser, Thomas Guyet, René Quiniou, Javier Romero and Torsten Schaub
		1141 :: Eliminating Disjunctions in Answer Set Programming by Restricted Unfolding :: Jianmin Ji, Hai Wan, Kewen Wang, Zhe Wang, Chuhan Zhang and Jiangtao Xu
		2232 :: Completion of Disjunctive Logic Programs :: Mario Alviano and Carmine Dodaro
		2347 :: Modeling and Reasoning about NTU Games via Answer Set Programming :: Giovanni Amendola, Gianluigi Greco, Nicola Leone and Pierfrancesco Veltri
		1128 :: Packing graphs with ASP for landscape simulation :: Thomas Guyet, Yves Moinard, Jacques Nicolas and René Quiniou
		381 :: An ASP Semantics for Default Reasoning with Constraints :: Pedro Cabalar, Roland Kaminski, Max Ostrowski and Torsten Schaub
		2151 :: Exploiting Partial Assignments for Efficient Evaluation of Answer Set Programs with External Source Access :: Thomas Eiter, Tobias Kaminski, Christoph Redl and Antonius Weinzierl

08:30–09:55		
PLACE	SESSION	TALK
Beekman Parlor	Machine Learning10 :: New Problems	169 :: Semi-supervised Active Learning with Cross-class Sample Transfer :: Yuchen Guo
		1265 :: Crowdsourcing via Tensor Augmentation and Completion :: Yao Zhou and Jingrui He
		1919 :: Bounds for Learning from Evolutionary-Related Data in the Realizable Case :: Ondřej Kuželka, Yuyi Wang and Jan Ramon
		2020 :: Incorporating External Knowledge into Crowd Intelligence for More Specific Knowledge Acquisition :: Tao Han, Hailong Sun, Yangqiu Song, Yili Fang, Xudong Liu and Jinpeng Huai
		1533 :: Weight features for predicting future model performance of deep neural networks :: Yasunori Yamada and Tetsuro Morimura
		223 :: The Role of Typicality in Object Classification: Improving The Generalization Capacity of Convolutional Neural Networks :: Babak Saleh, Ahmed Elgammal and Jacob Feldman
		976 :: Partially Supervised Graph Embedding for Positive Unlabelled Feature Selection :: Yufei Han and Yun Shen
Sutton North	Machine Learning11 :: Learning Preferences or Rankings	810 :: Constrained Preference Embedding for Item Recommendation :: Xin Wang, Yunhui Guo and Congfu Xu
		1008 :: Fast Structural Binary Coding :: Dongjin Song, Wei Liu and David Meyer
		421 :: Greedy Learning of Generalized Low-Rank Models :: Quanming Yao and James.T Kwok
		1608 :: Improving Top-N Recommendation with Heterogeneous Losses :: Feipeng Zhao and Yuhong Guo
		1618 :: Transductive Optimization of Top k Precision :: Liping Liu, Thomas Dietterich, Nan Li and Zhi-Hua Zhou
		1830 :: Graph Quality Judgement: A Large Margin Expedition :: Yu-Feng Li, Shao-Bo Wang and Zhi-Hua Zhou
		1230 :: The Complexity of Learning Acyclic CP-nets :: Eisa Alanazi, Malek Mouhoub and Sandra Zilles

08:30–09:55		
PLACE	SESSION	TALK
Gibson Suite	Machine Learning12 :: Deep Learning	984 :: DrMAD: Distilling Reverse-Mode Automatic Differentiation for Optimizing Hyperparameters of Deep Neural Networks :: Jie Fu, Hongyin Luo, Jiashi Feng, Kian Hsiang Low and Tat-Seng Chua
		1350 :: Learning A Deep \$ell_infty\$ Encoder for Hashing :: Zhangyang Wang, Yingzhen Yang, Shiyu Chang, Qing Ling and Thomas Huang
		877 :: Improving DCNN Performance with Sparse Category-Selective Objective Function :: Shizhou Zhang, Yihong Gong and Jinjun Wang
		1080 :: Improving CNN Performance with Min-Max Objective :: Weiwei Shi, Yihong Gong and Jinjun Wang
		1250 :: Predicting Personal Traits from Facial Images using Convolutional Neural Networks Augmented with Facial Landmark Information :: Yoad Lewenberg, Yoram Bachrach, Sukrit Shankar and Antonio Criminisi
		1757 :: Deep Learning for Reward Design to Improve Monte Carlo Tree Search in ATARI Games :: Xiaoxiao Guo, Satinder Singh, Richard Lewis and Honglak Lee
		1357 :: Tri-Party Deep Network Representation :: Shirui Pan, Jia Wu, Xingquan Zhu and Chengqi Zhang
Sutton Center	AI and the Web5	1114 :: Intervention Strategies for Increasing Engagement in Volunteer-Based Crowdsourcing :: Avi Segal, Kobi Gal, Ece Kamar, Eric Horvitz, Alex Bowyer and Grant Miller
		1290 :: WebGazer: Scalable Eye Tracking Using User Interactions :: Alexandra Papoutsaki, Patsorn Sangkloy, James Laskey, Nediya Daskalova, Jeff Huang and James Hays
		1437 :: Learning Compact Visual Representation with Canonical Views for Robust Mobile Landmark Search :: Lei Zhu, Jialie Shen, Xiaobai Liu and Liang Xie
		1489 :: Modeling the Homophily Effect between Links and Communities for Overlapping Community Detection :: Hongyi Zhang, Tong Zhao, Irwin King and Michael R. Lyu
		1836 :: Learning Defining Features for Categories :: Bo Xu, Chenhao Xie, Yi Zhang, Yanghua Xiao, Haixun Wang and Wei Wang
		1863 :: Learning Deep Intrinsic Video Representation by Exploring Temporal Coherence and Graph Structure :: Yingwei Pan, Yehao Li, Ting Yao, Tao Mei, Houqiang Li and Yong Rui

10:05–11:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems7 :: Auctions, Mechanism Design and Market-Based Systems2	985 :: Better Strategyproof Mechanisms without Payments or Prior – An Analytic Approach :: Yun Kuen Cheung
		2092 :: Automated Mechanism Design without Money via Machine Learning :: Harikrishna Narasimhan, Shivani Agarwal and David Parkes
		2062 :: Online Mechanism Design for Vehicle-to-Grid Car Parks :: Enrico Gerding, Sebastian Stein, Sofia Ceppi and Valentin Robu
		2421 :: An Empirical Game-Theoretic Analysis of Price Discovery in Prediction Markets :: Elaine Wah, Sebastien Lahaie and David Pennock
		2603 :: Measuring performance of peer prediction mechanisms using replicator dynamics :: Victor Shnayder, Rafael Frongillo and David Parkes
Madison Suite	Uncertainty in AI4	2306 :: Limited Discrepancy AND/OR Search :: Javier Larrosa, Emma Rollon and Rina Dechter
		2308 :: Constrained Local Latent Variable Discovery :: Tian Gao and Qiang Ji
		2723 :: Bayesian Nonparametric Collaborative Topic Poisson Factorization for Electronic Health Records-Based Phenotyping :: Wonsung Lee, Youngmin Lee, Heeyoung Kim and Il-Chul Moon
		2785 :: Bayesian Reinforcement Learning with Behavioral Feedback :: Teakgyu Hong, Jongmin Lee, Kee-Eung Kim, Pedro A. Ortega and Daniel Lee
		715 :: On Structural Properties of MDPs that Bound Loss due to Shallow Planning :: Nan Jiang, Satinder Singh and Ambuj Tewari
Clinton Suite	Planning and Scheduling7 :: Planning under Uncertainty2	2422 :: Asymptotically tight bounds for inefficiency in risk-averse selfish routing :: Thanasis Lianeas, Evdokia Nikolova and Nicolas Stier-Moses
		2754 :: Scalable Greedy Algorithms for Task/Resource Constrained Multi-Agent Stochastic Planning :: Pritee Agrawal, Pradeep Varakantham and William Yeoh
		2827 :: Managing Overstaying Electric Vehicles in Park-and-Charge Facilities :: Ragavendran Gopalakrishnan, Arpita Biswas and Partha Dutta
		2672 :: Probably Approximately Correct Learning in Stochastic Games with Temporal Logic Specifications :: Min Wen and Ufuk Topcu
		2821 :: A Symbolic Closed-form Solution to Sequential Market Making with Inventory :: Shamin Kinathil, Scott Sanner, Sanmay Das and Nicolas Della Penna

10:05–11:05		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications6	2679 :: Dimensionally Guided Synthesis of Mathematical Word Problems :: Ke Wang and Zhendong Su
		1172 :: Controllable Procedural Content Generation via Constrained Multi-Dimensional Markov Chain Sampling :: Sam Snodgrass and Santiago Ontaño
		1513 :: Scale-adaptive Low-resolution Person Re-identification via Learning A Discriminating Surface :: Zheng Wang, Ruimin Hu, Yi Yu, Junjun Jiang, Chao Liang and Jinqiao Wang
		1689 :: Modifying MCTS for Human-like General Video Game Playing :: Ahmed Khalifa, Aaron Isaksen, Julian Togelius and Andy Nealen
		1845 :: Optimal Interdiction of Illegal Network Flow :: Qingyu Guo, Bo An, Yair Zick and Chunyan Miao
Gibson Suite	Constraints & Satisfiability5	1019 :: Fast-and-Light Stochastic ADMM :: Shuai Zheng and James Kwok
		1047 :: ASP for Anytime Dynamic Programming on Tree Decompositions :: Bernhard Bliem, Benjamin Kaufmann, Torsten Schaub and Stefan Woltran
		1839 :: Towards Fast Algorithms for the Preference Consistency Problem Based on Hierarchical Models :: Anne-Marie George, Nic Wilson and Barry O’Sullivan
		2090 :: Leviathan: a new LTL satisfiability checking tool based on a one-pass tree-shaped tableau :: Matteo Bertello, Nicola Gigante, Angelo Montanari and Mark Reynolds
		2407 :: A SAT-based Approach for Mining Association Rules :: Abdelhamid Boudane, Said Jabbour, Lakhdar Sais and Yakoub Salhi
Sutton Center	Natural Language Processing5	1381 :: Parse Tree Fragmentation of Ungrammatical Sentences :: Homa B. Hashemi and Rebecca Hwa
		2792 :: Towards Zero Unknown Word in Neural Machine Translation :: Xiaoqing Li, Jiajun Zhang and Chengqing Zong
		2807 :: Neural Network Translation Models for Grammatical Error Correction :: Shamil Chollampatt, Kaveh Taghipour and Hwee Tou Ng
		2831 :: Exploiting N-Best Hypotheses to Improve an SMT Approach to Grammatical Error Correction :: Duc Tam Hoang, Shamil Chollampatt and Hwee Tou Ng
		166 :: From One Point to A Manifold: Knowledge Graph Embedding For Precise Link Prediction :: Han Xiao, Minlie Huang and Xiaoyan Zhu

11:35–12:35		
PLACE	SESSION	TALK
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		739 :: Catcher-Evader Games :: Yuqian Li, Vincent Conitzer and Dmytro Korzhuk
		775 :: Generalized Discrete Preference Games :: Vincenzo Auletta, Ioannis Caragiannis, Diodato Ferraioli, Clemente Galdi and Giuseppe Persiano
		2220 :: Role Assignment for Game-Theoretic Cooperation :: Catherine Moon and Vincent Conitzer
		2531 :: Congestion Games with Polytopal Strategy Spaces :: Hau Chan and Albert Jiang
Madison Suite	Knowledge Representation, Reasoning, and Logic7 :: Preferences	1187 :: Preference Inference Through Rescaling Preference Learning :: Nic Wilson and Mojtaba Montazery
		2444 :: Preferential Query Answering over the Semantic Web with Possibilistic Networks :: Stefan Borgwardt, Bettina Fazzinga, Thomas Lukasiewicz, Akanksha Shrivastava and Oana Tifrea-Marcuska
		1274 :: Group Decision Making via Probabilistic Belief Merging :: Nico Potyka, Erman Acar, Matthias Thimm and Heiner Stuckenschmidt
		730 :: Pairwise Diffusion of Preference Rankings :: Markus Brill, Edith Elkind, Ulle Endriss and Umberto Grandi
		2139 :: Nash equilibria and their elimination in resource games :: Nicolas Troquard
Clinton Suite	Planning and Scheduling8 :: Planning (General/other)2	2865 :: State-dependent Cost Partitionings for Cartesian Abstractions in Classical Planning :: Thomas Keller, Florian Pommerening, Jendrik Seipp, Florian Geißer and Robert Mattmüller
		2903 :: Blind Search for Atari-like Online Planning Revisited :: Alexander Shleyfman, Alexander Tisov and Carmel Domshlak
		1529 :: Anticipatory Troubleshooting :: Netanel Hasidi, Roni Stern, Meir Kalech and Shulamit Reches
		2126 :: \$exists\$-STRIPS: Existential Quantification in Planning and Constraint Satisfaction :: Guillem Francès and Hector Geffner
		1017 :: Heuristic Subset Selection in Classical Planning :: Levi Lelis, Santiago Franco, Marvin Abisrror, Mike Barley, Sandra Zilles and Robert Holte

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PLACE	SESSION	TALK
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		212 :: A Relaxed Ranking-based Factor Model for Recommender System from Implicit Feedback :: Huayu Li and Yong Ge
		374 :: Makeup like a superstar: Deep Localized Makeup Transfer Network :: Si Liu, Xinyu Ou, Ruihe Qian, Wei Wang and Xiaochun Cao
		437 :: Exploring the Context of Locations for Personalized Location Recommendations :: Xin Liu and Yong Liu
		639 :: Feature Learning based Deep Supervised Hashing with Pairwise Labels :: Wu-Jun Li, Sheng Wang and Wang-Cheng Kang
Gibson Suite	Combinatorial & Heuristic Search4	2472 :: Canonical Orderings on Grids :: Nathan Sturtevant and Steve Rabin
		2485 :: Monte Carlo Tree Search in Continuous Action Spaces with Execution Uncertainty :: Timothy Yee, Viliam Lisy and Michael Bowling
		348 :: Truncating Shortest Path Search for Efficient Map-matching :: Takashi Imamichi, Takayuki Osogami and Rudy Raymond
		1754 :: On the Topology of Genetic Algorithms :: David Hofmeyr
		1827 :: Towards a White Box Approach to Automated Algorithm Design :: Steven Adriaensen and Ann Nowé
Sutton Center	Machine Learning13 :: Relational Learning	1302 :: Learning First-Order Logic Embeddings via Graph Rewriting :: William Yang Wang and William Cohen
		1752 :: Copula Mixed-Membership Stochastic Blockmodel :: Xuhui Fan and Richard Yi Da Xu
		2052 :: Learning Higher-Order Logic Programs through Abstraction and Invention :: Andrew Cropper and Stephen Muggleton
		2801 :: On the Representation and Embedding of Knowledge Bases Beyond Binary Relations :: Jianfeng Wen, Jianxin Li, Yongyi Mao, Shini Chen and Richong Zhang
		1713 :: Learning Text Semantic Similarity with Structural Alignment :: Chen Liang, Praveen Paritosh, Vinodh Rajendran and Kenneth Forbus

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Madison Suite	Knowledge Representation, Reasoning, and Logic8 :: Knowledge Representation2	1995 :: Learning Possibilistic Logic Theories from Default Rules :: Ondřej Kuželka, Jesse Davis and Steven Schockaert
		1681 :: Distributed Autoepistemic Logic and its Application to Access Control :: Pieter Van Hertum, Marcos Cramer, Bart Bogaerts and Marc Denecker
		2466 :: Epistemic boolean games based on a logic of visibility and control :: Andreas Herzig, Emiliano Lorini, Faustine Maffre and Francois Schwarzenruber
		269 :: Elliptical Summary Randomisation for Sensor-based Human Activity Recognition :: Sarah M. Erfani, Mahsa Baktashmotlagh, Masud Moshtaghi, Vinh Nguyen, Christopher Leckie, James Bailey and Kotagiri Ramamohanarao
		489 :: Text-enhanced Representation Learning for Knowledge Graph :: Zhigang Wang and Juanzi Li
		1517 :: Epistemic GDL: A logic for representing and reasoning about imperfect information games :: Guifei Jiang, Dongmo Zhang, Laurent Perrussel and Heng Zhang
		837 :: Representation Learning of Knowledge Graphs with Hierarchical Types :: Ruobing Xie, Zhiyuan Liu and Maosong Sun
Clinton Suite	Knowledge Representation, Reasoning, and Logic9	529 :: Diagnosability of Discrete-Event Systems with Uncertain Observations :: Xingyu Su, Marina Zanella and Alban Grastien
		1101 :: Conservative Rewritability of Description Logic TBoxes :: Boris Konev, Carsten Lutz, Frank Wolter and Michael Zakharyashev
		1166 :: Efficient Sequential Model-Based Fault-Localization with Partial Diagnoses :: Kostyantyn Shchekotykhin, Thomas Schmitz and Dietmar Jannach
		1292 :: Efficient Query Answering Over Expressive Inconsistent Description Logics :: Eleni Tsalapati, Giorgos Stoilos, Giorgos Stamou and George Koletsos
		2274 :: Investigating the Relationship between Argumentation Semantics via Signatures :: Paul Dunne, Thomas Linsbichler, Christof Spanring and Stefan Woltran
		2296 :: Object-Relational Queries over CFDL _{nc} Knowledge Bases: OBDA for the SQL-Literate :: Jason St. Jacques, David Toman and Grant Weddell
		2887 :: Knowledge Compilation Meets Communication Complexity :: Simone Bova, Florent Capelli, Stefan Mengel and Friedrich Slivovsky

15:10–16:35		
PLACE	SESSION	TALK
Beekman Parlor	Machine Learning14 :: Neural Networks	1531 :: Staleness-aware Async-SGD for Distributed Deep Learning :: Wei Zhang, Suyog Gupta, Xiangru Lian and Ji Liu
		39 :: Cost-aware Pre-training for Multiclass Cost-sensitive Deep Learning :: Yu-An Chung, Hsuan-Tien Lin and Shao-Wen Yang
		254 :: Unsupervised Learning on Neural Network Outputs :: Yao Lu
		1758 :: Deep, Convolutional, and Recurrent Models for Human Activity Recognition using Wearables :: Nils Y. Hammerla, Shane Halloran and Thomas Ploetz
		1774 :: Discriminatively trained recurrent neural networks for continuous dimensional emotion recognition from audio :: Felix Weninger, Fabien Ringeval, Erik Marchi and Björn Schuller
		2861 :: Learning Compact Neural Word Embeddings by Parameter Space Sharing :: Jun Suzuki and Masaaki Nagata
		467 :: Neural Enquirer: Learning to Query Tables in Natural Language :: Pengcheng Yin, Zhengdong Lu, Hang Li and Ben Kao
Sutton North	Machine Learning15 :: Ensemble Methods	252 :: Unsupervised Human Action Categorization with Consensus Information Bottleneck Method :: Xiaoqiang Yan, Yangdong Ye and Xueying Qiu
		1666 :: Dealing with Multiple Classes in Online Class Imbalance Learning :: Shuo Wang, Leandro L. Minku and Xin Yao
		2787 :: A Robust Convex Formulations for Ensemble Clustering :: Junning Gao, Makoto Yamada, Samuel Kaski, Hiroshi Mamitsuka and Shanfeng Zhu
		2263 :: Version space reduction based on ensembles of dissimilar balanced Perceptrons :: Karen Braga Enes, Saulo Moraes Villela and Raul Fonseca Neto
		120 :: Multiple Kernel Clustering with Local Kernel Alignment Maximization :: Miaomiao Li, Xinwang Liu, Lei Wang, Yong Dou, Jianping Yin and En Zhu
		554 :: Interactive Martingale Boosting :: Ashish Kulkarni, Pushpak Burange and Ganesh Ramakrishnan
		809 :: Generalized Dictionary for Multitask Learning with Boosting :: Boyu Wang and Joelle Pineau

15:10–16:35		
PLACE	SESSION	TALK
Gibson Suite	Machine Learning16 :: Time-series/Data Streams	702 :: Clustering Financial Time Series: How Long is Enough? :: Gautier Marti, Sébastien Andler, Frank Nielsen and Philippe Donnat
		1219 :: Adversarial Sequence Classification :: Jia Li, Kaiser Asif, Hong Wang, Brian Ziebart and Tanya Berger-Wolf
		2164 :: Learning Multi-Step Predictive State Representations :: Lucas Langer, Borja Balle and Doina Precup
		575 :: ST-MVL: Filling Missing Values in Geo-sensory Time Series Data :: Yi Xiuwen, Zheng Yu, Zhang Junbo and Li Tianrui
		1135 :: ADL™: A Topic Model for Recognition of Activities of Daily Living in a Smart Home :: Yu Chen, Tom Diethe and Peter Flach
		1643 :: Enhancing Energy Disaggregation through Household Structure Analysis via Hawkes Processes :: Liangda Li and Hongyuan Zha
		1567 :: Learning Stable Linear Dynamical Systems with the Weighted Least Square Method :: Wenbing Huang, Lele Cao, Fuchun Sun, Deli Zhao, Huaping Liu and Shanshan Yu
Sutton Center	AI and the Web6	2033 :: Deep Semantics-preserving and Ranking-based Hashing for Image Retrieval :: Ting Yao, Fuchen Long, Tao Mei and Yong Rui
		2081 :: KOGNAC: Efficient Encoding of Large Knowledge Graphs :: Jacopo Urbani, Sourav Dutta, Sairam Gurajada and Gerhard Weikum
		2115 :: Learning to Incentivize: Eliciting Effort via Output Agreement :: Yang Liu and Yiling Chen
		2376 :: On The Use Of Non-Objection Inference In Inconsistent Lightweight Ontologies :: Zied Bouraoui, Salem Benferhat, Madalina Croitoru, Odile Papini and Karim Tabia
		2814 :: Assessing Translation Ability through Vocabulary Ability Assessment :: Yo Ehara, Yukino Baba, Masao Utiyama and Eiichiro Sumita
		2826 :: Practical linear models for large-scale one-class collaborative filtering :: Suvash Sedhain, Hung Bui, Jaya Kawale, Nikos Vlassis, Branislav Kveton, Aditya Menon, Trung Bui and Scott Sanner
		2830 :: Ordering Concepts Based on Common Attribute Intensity :: Tatsuya Iwanari, Naoki Yoshinaga, Nobuhiro Kaji, Toshiharu Nishina, Masashi Toyoda and Masaru Kitsuregawa

17:05–18:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems9 :: Coordination and Collaboration1	2160 :: Efficient Local Search in Coordination Games on Graphs :: Sunil Easaw Simon and Dominik Wojtczak
		2272 :: Opinion Dynamics with Local Interactions :: Dimitris Fotakis, Dimitris Palyvos-Giannas and Stratis Skoulakis
		274 :: Silk: A Simulation Study of Regulating Open Normative Multiagent Systems :: Mehdi Mashayekhi, Hongying Du, George F. List and Munindar P. Singh
		2666 :: Controlling growing tasks with heterogeneous agents :: James Parker and Maria Gini
		2201 :: Using Message-passing DCOP Algorithms to Solve Energy-efficient Smart Environment Configuration Problems :: Pierre Rust, Gauthier Picard and Fano Ramparany
Madison Suite	Agent-based and Multi-agent Systems10 :: Normative MAS and Logical Formalisation of MAS	659 :: Norm Monitoring with Incomplete Observations :: Natalia Criado and Jose M. Such
		2191 :: The Complexity of Norm Synthesis and Recognition in Normative Multiagent Systems :: Xiaowei Huang, Ji Ruan, Qingliang Chen and Kaile Su
		1974 :: On the impact of modal depth in epistemic planning :: Tristan Charrier, Bastien Maubert and Francois Schwarzentrubert
		1275 :: Evaluation of arguments from support relations: Axioms and Semantics :: Leila Amgoud and Jonathan Ben-Naim
Clinton Suite	Planning and Scheduling9	894 :: Verifying Pushdown Multi-Agent Systems against Strategy Logics :: Taolue Chen, Fu Song and Zhilin Wu
		355 :: Resolving Over-constrained Conditional Temporal Problems using Semantically Similar Alternatives :: Peng Yu, Jiaying Shen, Peter Yeh and Brian Williams
		1271 :: Heuristic Planning for PDDL+ Domains :: Wiktor Piotrowski, Maria Fox, Derek Long, Daniele Magazzeni and Fabio Mercorio
		2178 :: Distributed Decoupling Of Multiagent Simple Temporal Problems :: Jayanth Krishna Mogali, Stephen Smith and Zachary Rubinstein
		488 :: Ordinal Regression for Learning Planning Heuristics :: Caelan Garrett, Leslie Kaelbling and Tomas Lozano-Perez

Thursday, July 14

17:05–18:05		
PLACE	SESSION	TALK
Sutton North	Multidisciplinary Topics and Applications8	823 :: Portfolio Blending via Thompson Sampling :: Weiwei Shen and Jun Wang
		1378 :: Predicting Confusion in Information Visualization from Eye Tracking and Interaction Data :: Sébastien Lallé, Cristina Conati and Giuseppe Carenini
		1673 :: Reinforcement Learning applied to Incremental Spoken Dialogue Systems :: Hatim Khouzaimi, Romain Laroche and Fabrice Lefèvre
		2142 :: Three strategies to success: Learning adversary models in security games :: Nika Haghtalab, Fei Fang, Thanh Nguyen, Arunesh Sinha, Ariel Procaccia and Milind Tambe
		2477 :: Player Goal Recognition in Open-World Digital Games with Long Short-Term Memory Networks :: Wookhee Min, Bradford Mott, Jonathan Rowe, Barry Liu and James Lester
Gibson Suite	Machine Learning17 :: Unsupervised Learning2	1526 :: EBEEK: Exemplar-based Kernel Preserving Embedding :: Rania Ibrahim and Ahmed Elbagoury
		1574 :: Robust and Sparse Fuzzy K-Means Clustering :: Jinglin Xu, Junwei Han, Kai Xiong and Feiping Nie
		2350 :: Entity Embedding-based Anomaly Detection for Heterogeneous Categorical Events :: Ting Chen, Lu-An Tang, Yizhou Sun, Zhengzhang Chen and Kai Zhang
		1738 :: Efficiently Finding Conceptual Clustering Models with Integer Linear Programming :: Abdelkader Ouali, Samir Loudni, Yahia Lebbah, Patrice Boizumault, Albrecht Zimmermann and Lakhdar Loukil
		2635 :: Grounding Topic Models with Knowledge Bases :: Zhiting Hu, Gang Luo, Mrinmaya Sachan, Zaiqing Nie and Eric Xing
Sutton Center	Natural Language Processing6	1127 :: HC-search for Incremental Parsing :: Yijia Liu, Wanxiang Che, Bing Qin and Ting Liu
		1562 :: Neural Generative Question Answering :: Jun Yin, Xin Jiang, Zhengdong Lu, Lifeng Shang, Hang Li and Xiaoming Li
		158 :: Expert Finding for Question Answering via Ranking Metric Network Learning :: Zhou Zhao, Qifan Yang, Deng Cai, Xiaofei He and Yueting Zhuang
		343 :: Match-SRNN: Modeling the Recursive Matching Structure with Spatial RNN :: Shengxian Wan, Yanyan Lan, Jun Xu, Jiafeng Guo, Liang Pang and Xueqi Cheng
		364 :: Sparse Word Embeddings Using L1 Regularized Online Learning :: Fei Sun, Jiafeng Guo, Yanyan Lan, Jun Xu and Xueqi Cheng

Friday, July 15

08:30–09:55		
PLACE	SESSION	TALK
Beekman Parlor	Machine Learning18 :: Feature Selection/ Construction2	1450 :: Adaptive Variance Reducing for Stochastic Gradient Descent :: Zebang Shen and Hui Qian
		1479 :: Parallel Pareto Optimization for Subset Selection :: Chao Qian, Jing-Cheng Shi, Yang Yu, Ke Tang and Zhi-Hua Zhou
		130 :: Learning using Unselected Features (LUF _e) :: Joseph Taylor, Viktoriia Sharmanska, Kristian Kersting, David Weir and Novi Quadrianto
		1668 :: Probabilistic Rank-One Matrix Analysis with Concurrent Regularization :: Yang Zhou and Haiping Lu
		821 :: Joint Feature Selection and Structure Preservation for Domain Adaptation :: Jingjing Li, Jidong Zhao and Ke Lu
		680 :: Semantics-aware Deep Correspondence Structure Learning for Robust Person Re-identification :: Yaqing Zhang, Xi Li, Liming Zhao and Zhongfei Zhang
Madison Suite	Knowledge Representation, Reasoning, and Logic10	641 :: Towards Convolutional Neural Networks Compressing via Global Error Reconstruction :: Shaohui Lin, Rongrong Ji, Yongjian Wu and Xuelong Li
		1794 :: Efficient Representations for the Modal Logic S5 :: Alexandre Niveau and Bruno Zanuttini
		2613 :: Trend-Based Prediction of Spatial Change :: Xiaoyu Ge, Jae Hee Lee, Jochen Renz and Peng Zhang
		1005 :: The Inconsistency in Gödel's Ontological Argument: A Success Story for AI in Metaphysics :: Christoph Benzmüller and Bruno Woltzenlogel Paleo
		2233 :: Normative Practical Reasoning via Argumentation and Dialogue :: Zohreh Shams, Marina De Vos, Nir Oren and Julian Padget
		1377 :: The Complexity of Playing Durak :: Édouard Bonnet
		2764 :: DeepSchema: Automatic Schema Acquisition from Wearable Sensor Data in Restaurant Situations :: Eun-Sol Kim, Kyoung-Woon On and Byoung-Tak Zhang
		1866 :: Simulating Human Inferences in the Light of New Information: A Formal Analysis :: Marco Ragni, Christian Eichhorn and Gabriele Kern-Isberner

08:30–09:55		
PLACE	SESSION	TALK
Clinton Suite	Machine Learning19 :: Classification2	1002 :: Diversifying Convex Transductive Experimental Design for Active Learning :: Lei Shi and Yi-Dong Shen
		1640 :: Learning by Crowdsourcing :: Lu Wang and Zhi-Hua Zhou
		426 :: Fast Learning from Distributed Datasets without Entity Matching :: Giorgio Patrini, Richard Nock, Stephen Hardy and Tiberio Caetano
		808 :: Cross-lingual Dataless Classification for Many Languages :: Yangqiu Song, Shyam Upadhyay, Haoruo Peng and Dan Roth
		2597 :: Precision Instrument Targeting via Image Registration for the Mars 2020 Rover :: Gary Doran, Tara Estlin and David Thompson
		820 :: Multi-grained Role Labeling Based on Multi-modality Information for Real Customer Service Telephone Conversation :: Weizhi Ma, Min Zhang, Yiqun Liu and Shaoping Ma
		931 :: Beyond object recognition: Deep visual sentiment analysis via affective concept supervision and transfer :: Jingwen Wang, Jianlong Fu, Yong Xu and Tao Mei
Sutton North	Machine Learning20	480 :: Efficient k-Support-Norm Regularized Minimization via Fully Corrective Frank-Wolfe Method :: Bo Liu, Xiaotong Yuan, Shaoting Zhang, Qingshan Liu and Dimitris Metaxas
		1157 :: Denoising and Completion of 3D Data via Multidimensional Dictionary Learning :: Zemin Zhang and Shuchin Aeron
		1449 :: Class-wise Supervised Hashing with Taxonomy and Active Bits :: Long-Kai Huang and Sinno Jialin Pan
		1565 :: Unsupervised Feature Learning from Time Series :: Qin Zhang, Peng Zhang, Jia Wu, Yingjie Tian and Chengqi Zhang
		1893 :: Derivative-Free Optimization of High-Dimensional Non-Convex Functions by Sequential Random Embeddings :: Hong Qian, Yi-Qi Hu and Yang Yu
		2009 :: Asynchronous Accelerated Stochastic Gradient Descent :: Qi Meng, Wei Chen, Jingcheng Yu, Taifeng Wang and Tieyan Liu
		2430 :: A Generalized Matching Pursuit Approach for Graph-Structured Sparsity :: Feng Chen and Baojian Zhou

08:30–09:55		
PLACE	SESSION	TALK
Gibson Suite	Machine Learning21	2530 :: Distance Based Modeling of Interactions in Structured Regression :: Ivan Stojkovic, Vladisav Jelisavcic, Veljko Milutinovic and Zoran Obradovic
		2590 :: Empirical Risk Minimization for Metric Learning Using Privileged Information :: Xun Yang, Meng Wang, Luming Zhang and Dacheng Tao
		2824 :: Soft Margin Consistency Based Scalable Multi-View Maximum Entropy Discrimination :: Liang Mao and Shiliang Sun
		801 :: Inference Machines for Nonparametric Filter Learning :: Arun Venkatraman, Wen Sun, Byron Boots, J. Andrew Bagnell and Martial Hebert
		1094 :: Bridging LSTM Architecture with the Neural Dynamics of Reading :: Peng Qian, Xipeng Qiu and Xuanjing Huang
		1362 :: Coupled Marginalized Auto-encoders for Cross-domain Multi-view Learning :: Shuyang Wang, Zhengming Ding and Yun Fu
		1585 :: Bridging Saliency Detection to Weakly Supervised Object Detection Based on Self-paced Curriculum Learning :: Dingwen Zhang, Deyu Meng, Long Zhao and Junwei Han
Sutton Center	Machine Learning22	2320 :: Cold-start recommendations for audio news stories using matrix factorization :: Ehsan Mohammady Ardehaly, Aron Culotta, Vivek Sundararaman and Alwar Narayanan
		123 :: Multi-Modal Bayesian Embeddings for Learning Social Knowledge Graphs :: Zhilin Yang, Jie Tang and William Cohen
		7 :: Latent Contextual Bandits and their Application to Personalized Recommendations for New Users :: Li Zhou and Emma Brunskill
		391 :: Supervised Matrix Factorization for Cross-Modality Hashing :: Hong Liu, Rongrong Ji, Yongjian Wu, Wei Liu and Gang Hua
		1286 :: Stochastic Multiresolution Persistent Homology Kernel :: Jerry Zhu, Ara Vartanian, Manish Bansal, Duy Nguyen and Luke Brandl
		640 :: Semantic Analysis for Crowded Scenes Based on Non-Parametric Tracklet Clustering :: Allam S. Hassanein, Mohamed E. Hussein and Walid Gomaa
		2077 :: Change Detection using Directional Statistics :: Tsuyoshi Ide, Dzung Phan and Jayant Kalagnanam

10:05–11:05		
PLACE	SESSION	TALK
Beekman Parlor	Agent-based and Multi-agent Systems ¹¹ :: Noncooperative Games ²	2730 :: Truthfulness of a Proportional Sharing Mechanism in Resource Exchange :: Yukun Cheng, Xiaotie Deng, Qi Qi and Xiang Yan
		1202 :: On Truthful Mechanisms for Maximin Share Allocations :: Georgios Amanatidis, Georgios Birmpas and Evangelos Markakis
		1441 :: Facility Location with Minimax Envy :: Qingpeng Cai, Aris Filos-Ratsikas and Pingzhong Tang
		2290 :: Incentivizing Intelligent Customer Behavior in Smart-Grids: A Risk-Sharing Tariff & Optimal Strategies :: Georgios Methenitis, Michael Kaisers and Han La Poutré
		591 :: Interdependent Scheduling Games :: Andres Abeliuk, Haris Aziz, Gerardo Berbeglia, Serge Gaspers, Petr Kalina, Nicholas Mattei, Dominik Peters, Paul Stursberg, Pascal Van Hentenryck and Toby Walsh
Madison Suite	Knowledge Representation, Reasoning, and Logic ¹¹ :: Belief Change	2802 :: Is Promoting Beliefs Useful to Make Them Accepted in Networks of Agents? :: Nicolas Schwind, Katsumi Inoue, Gauvain Bourgne, Sébastien Konieczny and Pierre Marquis
		386 :: Extending the Harper Identity to Iterated Belief Change :: Richard Booth and Jake Chandler
		1446 :: Belief Update for Proper Epistemic Knowledge Bases :: Tim Miller and Christian Muise
		1509 :: On the relationship between P-log and LP [∧] MLN :: Evgenii Balai and Michael Gelfond
		1777 :: On Consensus Extraction :: Eric Gregoire, Sébastien Konieczny and Jean Marie Lagniez
Clinton Suite	Planning and Scheduling ¹⁰	2362 :: Informed Expectations to Guide GDA Agents in Partially Observable Environments :: Dustin Dannenhauer, Hector Munoz-Avila and Michael Cox
		967 :: LTLf and LDLf Synthesis Under Partial Observability :: Giuseppe De Giacomo and Moshe Vardi
		1004 :: Imperfect information games and generalized planning :: Giuseppe De Giacomo, Antonio Di Stasio, Aniello Murano and Sasha Rubin
		1212 :: 3D Action Recognition Using Multi-temporal Depth Motion Maps and Fisher Vector :: Chen Chen, Mengyuan Liu, Baochang Zhang, Jungong Han, Junjun Jiang and Hong Liu
		2537 :: Learning Predictive State Representations via Monte-Carlo Tree Search :: Yunlong Liu, Hexing Zhu, Yifeng Zeng and Zongxiong Dai

10:05–11:05		
PLACE	SESSION	TALK
Sutton North	Agent-based and Multi-agent Systems ¹² :: Coordination and Collaboration ²	354 :: Probabilistic Matrix Inspection and Group Scheduling :: Hooyeon Lee and Ashish Goel
		2364 :: Coco: Runtime Reasoning about Conflicting Commitments :: Nirav Ajmeri, Jiaming Jiang, Rada Chirkova, Jon Doyle and Munindar P. Singh
		1339 :: Reconfigurability in Reactive Multiagent Systems :: Xiaowei Huang, Qingliang Chen, Jie Meng and Kaile Su
		2808 :: How to Build Your Network? A Structural Analysis :: Anastasia Moskvina and Jiamou Liu
		2600 :: Interactive Teaching Strategies for Agent Training :: Ofra Amir, Ece Kamar, Andrey Kolobov and Barbara Grosz
Gibson Suite	Natural Language Processing ⁷	429 :: Bag-of-Embeddings for Text Classification :: Peng Jin, Yue Zhang, Xingyuan Chen and Yunqing Xia
		463 :: Context-Specific and Multi-Prototype Character Representations :: Xiaoqing Zheng, Jiangtao Feng and Wenqiang Zhang
		1398 :: To Project More or to Quantize More: Minimize Reconstruction Bias for Learning Compact Binary Codes :: Zhe Wang, Ling-Yu Duan, Junsong Yuan, Tiejun Huang and Wen Gao
		1791 :: Unsupervised Storyline Extraction on News Articles :: Deyu Zhou, Haiyang Xu, Yulan He and Xinyu Dai
		1891 :: Collaborative Multi-Level Embedding Learning from Reviews for Rating Prediction :: Wei Zhang, Quan Yuan, Jiawei Han and Jianyong Wang
Sutton Center	AI and the Web ⁷ :: Other topics in ML and the Web	2193 :: Multi-source Iterative Adaptation for Cross-domain Classification :: Himanshu Bhatt, Arun Rajkumar and Shourya Roy
		2873 :: Progressive Comparison for Ranking Estimation :: Ryusuke Takahama, Toshihiro Kamishima and Hisashi Kashima
		1606 :: Learning Hostname Preference to Enhance Search Relevance :: Jingjing Wang, Changsung Kang, Yi Chang and Jiawei Han
		2615 :: Real-Time Web Scale Event Summarization Using Sequential Decision Making :: Chris Kedzie, Fernando Diaz and Kathleen Mckeown
		2835 :: Identifying Key Observers to Find Popular Information in Advance :: Takuya Konishi, Tomoharu Iwata, Kohei Hayashi and Ken-Ichi Kawarabayashi

Sister Conference Papers

PLACE	SESSION	TALK
Tuesday, July 12		10:05–11:05
Regent Parlor	Best of ICRA, ICCV	3035 :: Learning Qualitative Spatial Relations for Robotic Navigation :: Abdeslam Boularias, Felix Duvallet, Jean Oh and Anthony Stentz
		3050 :: Observability, Identifiability and Sensitivity of Vision-Aided Inertial Navigation :: Joshua Hernandez, Konstantine Tsotsos and Stefano Soatto
		3029 :: Deep Neural Decision Forests :: Peter Kotschieder, Madalina Fiterau, Antonio Criminisi and Samuel Rota Bulò
Tuesday, July 12		11:35–12:35
Regent Parlor	Best of CADE	2949 :: A Decision Procedure for (Co)datatypes in SMT Solvers :: Andrew Reynolds and Jasmin Christian Blanchette
		3022 :: MathCheck: A Math Assistant based on a Combination of Computer Algebra Systems and SAT Solvers :: Ed Zulkoski, Vijay Ganesh and Krzysztof Czarnecki
		3039 :: Büchi, Lindenbaum, Tarski: A Program Analysis Appetizer :: Vijay D'Silva and Caterina Urban
Tuesday, July 12		17:05–18:05
Regent Parlor	Best of ICAPS	2948 :: Sequencing Operator Counts :: Toby Davies, Adrian Pearce, Peter J. Stuckey and Nir Lipovetzky
		3027 :: Domain Model Acquisition in the Presence of Static Relations in the LOP System :: Peter Gregory and Stephen Cresswell
		3031 :: Effective Planning with More Expressive Languages :: Guillem Francès and Hector Geffner
Wednesday, July 13		08:30–09:55
Regent Parlor	Best of CP	2951 :: Generating Tests for Robotized Painting Using Constraint Programming :: Morten Mossige, Arnaud Gotlieb and Hein Meling
		2957 :: On Broken Triangles :: Martin Cooper, Achref El Mouelhi, Cyril Terrioux and Bruno Zanuttini
		3018 :: Fleet Design Optimisation From Historical Data Using Constraint Programming and Large Neighbourhood Search :: Tommaso Urli and Philip Kilby
		3028 :: Projection, Inference and Consistency :: John Hooker

Sister Conference Papers

PLACE	SESSION	TALK
Wednesday, July 13		10:05—11:05
Regent Parlor	Best of ICLP	3024 :: Tabling as a Library with Delimited Control :: Benoit Desouter, Marko van Dooren, Tom Schrijvers and Alexander Vandenbroucke
		3032 :: From Non-Convex Aggregates to Monotone Aggregates in ASP :: Mario Alviano, Wolfgang Faber and Martin Gebser
		3038 :: On the Properties of GZ-Aggregates in Answer Set Programming :: Mario Alviano and Nicola Leone
Wednesday, July 13		11:35—12:35
Regent Parlor	Best of UAI	2955 :: Proximal Gradient Temporal Difference Learning Algorithms :: Bo Liu, Mohammad Ghavamzadeh, Ian Gemp, Ji Liu and Sridhar Mahadevan
		3026 :: Hashing-Based Approximate Probabilistic Inference in Hybrid Domains: An Abridged Report :: Vaishak Belle, Guy Van den Broeck and Andrea Passerini
		3034 :: Online Bellman Residual and Temporal Difference Algorithms with Predictive Error Guarantees :: Wen Sun and J. Andrew Bagnell
Thursday, July 14		08:30—09:55
Regent Parlor	Best of AAMAS, EC	2952 :: Optimal Prosumer Decision-Making using Factored MDPs :: Angelos Angelidakis and Georgios Chalkiadakis
		3021 :: The Dependence of Effective Planning Horizon on Model Accuracy :: Nan Jiang, Alex Kulesza, Satinder Baveja and Richard Lewis
		3025 :: Welfare Effects of Market Making in Continuous Double Auctions (Extended Abstract) :: Elaine Wah, Mason Wright and Michael Wellman
		3030 :: Why Prices Need Algorithms :: Tim Roughgarden and Inbal Talgam-Cohen
Thursday, July 14		10:05—11:05
Regent Parlor	Best of ICML	2990 :: Optimal and Adaptive Algorithms for Online Boosting :: Alina Beygelzimer, Satyen Kale and Haipeng Luo
		3036 :: A Nearly-Linear Time Framework for Graph-Structured Sparsity :: Chinmay Hegde, Piotr Indyk and Ludwig Schmidt
Thursday, July 14		11:35—12:35
Regent Parlor	Best of IUI	3033 :: Detecting Student Emotions in Computer-Enabled Classrooms :: Nigel Bosch, Sidney D'Mello, Ryan Baker, Jaclyn Ocumpaugh, Valerie Shute, Matthew Ventura, Lubin Wang and Weinan Zhao
		3037 :: Improving Topic Model Stability for Effective Document Exploration :: Yi Yang, Shimei Pan, Yangqiu Song, Jie Lu and Mercan Topkara

Demos

PLACE	SESSION	DEMO
Tuesday, July 12		08:30–20:00
Rhinelanders Gallery	Machine Learning/Data Mining Demos	3056 :: Robot Scavenger Hunt: a Standardized Framework for Evaluating Intelligent Mobile Robots
		3067 :: A Tag-based English Math Word Problem Solver with Understanding, Reasoning and Explanation
		3043 :: Data-based Promotion of Tourist Events with Minimal Operational Impact
		3053 :: A Demonstration of Interactive Task Learning
		3055 :: SMACK: An argumentation framework for opinion mining
		3052 :: PARecommender:A Pattern-based System for Route Recommendation
		3061 :: Implementation of Learning-Based Dynamic Demand Response on a Campus Micro-grid
		3040 :: A Tool for generating Interactive Euler diagrams
Wednesday, July 13		08:30–20:00
Rhinelanders Gallery	Planning/KR/NLP Demos	3059 :: An Adaptive Process Management System Implementation based on Situation Calculus, Indigolog and Classical Planning
		3064 :: Baby Tartanian8: Winning Agent from the 2016 Annual Computer Poker Competition
		3020 :: AI eXperimentation with the AIX platform
		3042 :: Interactive Planning-based Hypothesis Generation with LTS++
		3046 :: Klint: Assisting Integration and Querying of Heterogeneous Knowledge
		3041 :: Eddy: A Graphical Editor for OWL 2 Ontologies
		3060 :: KBQA: An Online Template Based Question Answering System over Freebase
		3058 :: Thou Shalt ASQFor And Shalt Receive The Semantic Answer

Demos

PLACE	SESSION	DEMO
Thursday, July 14		08:30–20:00
Rhinelanders Gallery	Machine Learning/Computer Vision Demos	3048 :: Practical 3D tracking using low-cost cameras
		3063 :: A Virtual Assistant to Help Dysphagia Patients Eat Safely At Home
		3069 :: Repairing general-purpose ASR output to improve accuracy of spoken sentences in specific domains using artificial development approach
		3023 :: An Intelligent System for Taxi Service Monitoring, Analytics and Visualization
		3054 :: VIPR: An Interactive Tool for Meaningful Visualization of High-Dimensional Data
		3066 :: Demo: Assisting visually impaired people navigate indoors

Doctoral Consortium Posters

PLACE	SESSION
Tuesday, July 12	
08:30–20:00	
Rhinelanders Gallery	Doctoral Consortium Posters

Early Career Talks

PLACE	TALK
Tuesday, July 1210:05–11:05	
Sutton South	A Hard Look at Soft Concepts :: Dafna Shahaf
	Recent Advances in Deep Learning: Learning Structured, Robust, and Multimodal Deep Models :: Ruslan Salakhutdinov
Tuesday, July 1211:35–12:35	
Sutton South	Language and Vision: Learning Knowledge about the World :: Yejin Choi
	Supersizing Self-Supervision: Never Ending Learning from Images, Text and Physical Interactions :: Abhinav Gupta
Tuesday, July 1217:05–18:05	
Sutton South	Planning with Expressive World Models :: Amanda Coles
	Open Information Extraction Systems and Downstream Applications :: Mausam
Wednesday, July 1308:30–09:55	
Sutton South	Unsupervised Methods for Disease Trajectory Subtyping :: Finale Velez-Doshi
	Machine Learning and Decision Making for Sustainability :: Stefano Ermon
Wednesday, July 1310:05–11:05	
Sutton South	Preference Restrictions in Computational Social Choice: Recent Progress :: Edith Elkind
	Boolean Satisfiability and Beyond: Algorithms, Analysis, and AI Applications :: Matti Jarvisalo
Wednesday, July 1311:35–12:35	
Sutton South	On Ranking and Choice Models :: Shivani Agarwal
	AI, Game Theory and Economics: A “Dream Team” for the Design of Combinatorial Auctions :: Sven Seuken
Wednesday, July 1317:05–18:05	
Sutton South	Towards an Individualized Reasoning Engine (for Healthcare) :: Suchi Saria
	Adversarial Artificial Intelligence :: Yevgeniy Vorobeychik

Early Career Talks

PLACE	TALK
Thursday, July 1408:30–09:55	
Sutton South	Directions in Hybrid Intelligence: Complementing AI Systems with Human Intelligence :: Ece Kamar
	Computer Science and Social Choice: A Fruitful Symbiosis :: Haris Aziz
Thursday, July 1410:05–11:05	
Sutton South	Humans and Machine of Like Mind: Augmenting Humans through Collaboration in Decision-Making Tasks :: Julie A Shah
	Plausible reasoning based on qualitative entity embeddings :: Steven Schockaert
Thursday, July 1411:35–12:35	
Sutton South	Ontology-Mediated Query Answering: Harnessing Knowledge to Get More From Data :: Meghyn Bienvenu
	First-Order Probabilistic Reasoning: Successes and Challenges :: Guy Van den Broeck
Thursday, July 1417:05–18:05	
Sutton South	Crowds and Robots: Leveraging the Web to Advance Robot Autonomy :: Sonia Chernova
	Sequential Decision Making for Improving Efficiency in Urban Environments :: Pradeep Varakantham

Invited Talks

Do as I say *and* as I do:
The future of automated programming

Sheila McIlraith
University of Toronto

Probabilistic Techniques
for Robot Navigation

Wolfram Burgard
University of Freiburg

AI’s Final Frontier? Buildings machines
that understand and shape human emotion

Jonathan Gratch
University of Southern California

Affective Computing is the field of research directed at creating technology that recognizes, interprets, simulates and stimulates human emotion. In this talk, I will broadly overview my fifteen years of effort in advancing this nascent field, and emphasize the rich interdisciplinary connections between computational and scientific approaches to emotion. I will touch on several broad questions: Can a machine understand human emotion? To what end? Can a machine “have” emotion, and how would this impact the humans that interact with them? I will address these questions in the context of several domains, including healthcare, economic decision-making and interpersonal-skills training. I will discuss the consequences of these findings for theories of intelligence (i.e., what function does emotion serve in human intelligence and could this benefit machines?) as well as their practical implications for human-computer, computer-mediated and human-robot interaction. Throughout, I will argue the need for an interdisciplinary partnership between the social and computational sciences around to topic of emotion.

Knowledge Representation in the Era
of Deep Learning, Watson and the
Semantic Web

James A. Hendler
Rensselaer Polytechnic Institute

A burst in optimism (and unwarranted fear) has grown around a number of technologies that are high impact and able to solve problems that have challenged AI researchers for years. The overenthusiasm that often follows such breakthroughs has caused some to declare (yet again) that it is the end of “knowledge representation” as AI moves into a world dominated by neural networks, data mining and the knowledge graph. In this talk, I argue that these technologies, while extremely powerful separately, are not only still a long way from human intelligence, but cannot get there without a level of knowledge and reasoning beyond what is currently available to these techniques, On the other hand, I also argue that taking these technologies into new and harder realms will require rethinking what knowledge representation is and how it is used.

Heuristic Search: Something Old and
Something New

Robert Holte
University of Alberta

I begin this talk with a review of long-established results in heuristic search and the early history of bidirectional heuristic search. I then describe a recent breakthrough in bidirectional heuristic search (the MM algorithm), which challenges long-held assumptions and exposes exciting new research directions. Although the technical details in this talk are focused on heuristic search, the general lessons with which I conclude are relevant to researchers in all branches of A.I. An important part of the presentation involves web-based audience participation, so please come armed with a device running a web browser.

Incentive Auctions and Spectrum Repacking:
A Case Study for “Deep Optimization”

Kevin Leyton-Brown
University of British Columbia

This talk will discuss the FCC’s “incentive auction”—currently underway!—which proposes to give television broadcasters an opportunity to sell their broadcast rights, to repack remaining

broadcasters into a smaller block of spectrum, and to resell the freed airwaves to telecom companies. The stakes for this auction are huge—projected tens of billions of dollars in revenue for the government—justifying the design of a special-purpose descending-price auction mechanism. An inner-loop problem in this mechanism is determining whether a given set of broadcasters can be repacked into a smaller block of spectrum while respecting radio interference constraints. This is an instance of a (worst-case intractable) graph coloring problem; however, stations’ broadcast locations and interference constraints are all known in advance. Early efforts to solve this problem considered hand-crafted mixed-integer programming formulations, but were unable to reliably solve realistic, national-scale problem instances. We advocate instead for a “deep optimization” approach that applies abundant offline computation to tailor an algorithm to the problem at hand. In particular, we leveraged automatic algorithm configuration and algorithm portfolio techniques, alongside constraint graph decomposition; novel caching mechanisms that allow reuse of partial solutions from related, solved problems; and the marriage of local-search and complete SAT solvers. We show that our approach solves virtually all of a set of problems derived from auction simulations within the short time budget required in practice.

Mastering the Game of Go with Deep
Neural Networks and Tree Search

David Silver
Google DeepMind

The game of Go has long been viewed as the most challenging of classic games for artificial intelligence due to its enormous search space and the difficulty of evaluating board positions and moves. Here we introduce a new approach to computer Go that uses ‘value networks’ to evaluate board positions and ‘policy networks’ to select moves. These deep neural networks are trained by a novel combination of supervised learning from human expert games, and reinforcement learning from games of self-play. Using this search algorithm, our program AlphaGo achieved a near perfect winning rate against other Go programs, and defeated the 18-time world title winner Lee Sedol by 4 games to 1.

IJCAI-16 Proceedings

The proceedings of the IJCAI conferences constitute one of the primary archival sources for literature on artificial intelligence. IJCAI-16 Proceedings are available online free of charge here:

<http://ijcai.org/proceedings/2016>

Enjoy New York City While You're at IJCAI-16

The central location of IJCAI-16 will afford conference attendees accessibility to all that New York has to offer! Manhattan’s extraordinary cityscape provides a dramatic charge for people of all interests and ages. Powerfully compact at 13.5 miles long, the borough is filled with soaring skyscrapers, glamorous neighborhoods, shops and restaurants, with the magnificent 843-acre Central Park—a National Historic Landmark—at its heart. Before or after an event, groups can sample Manhattan’s iconic cultural masterpieces - The Metropolitan Museum of Art, Museum of Modern Art and the Guggenheim Museum—or experience a live show on Broadway , at Lincoln Center, a TV studio or in jazz clubs from Harlem to Greenwich Village. The list of key landmarks is topped by the Statue of Liberty, the Empire State Building, Times Square, South Street Seaport, The Cloisters and Rockefeller Center. Whether one chooses to shop, dine or just people-watch, there’s truly no place like Manhattan.

Travel Tips

Airports/Accessibility

Getting to New York City from anywhere is quick and affordable. With three major airports and a combined total of over 20,000 flights per week, plus a comprehensive East Coast transit system, domestic and international attendees can get to NYC with ease.

Airports distance from Midtown:

- La Guardia (8 miles)
- JFK (15 miles)
- Newark (16 miles)

Airport Transportation

AirTrain JFK is the easiest way to travel to, from and around Kennedy International Airport. AirTrain connects with MTA New York City Transit subways and buses and the Long Island Rail Road, providing a low-cost way to travel by mass transit to major destinations in New York and New Jersey. AirTrain makes frequent stops everywhere around the airport: airline terminals, parking lots, hotel shuttle areas and rental car facilities. AirTrain rides around the airport are free. The service operates 24 hours a day, 365 days a year.

Destination: Midtown Manhattan, New York Penn Station

Connection: MTA NYC Transit E Subway at Jamaica Station

Cost / Time: \$7.50 / 50 minutes

Trains from Newark Airport to Penn Station are \$12.50 one way / 25 minutes

Taxis and shuttles are readily available from all airports.

Commuter Transportation

There are four local commuter trains in addition to an array of bus lines that provide easy access to NYC from the tristate area. NJ Transit, the Long Island Rail Road, Metro-North Railroad and the PATH (Port Authority Trans-Hudson) all run directly into NYC’s two main rail stations, Penn Station and Grand Central Terminal.

Ground Transportation

Subway System: MTA public subways remain the cheapest and quickest way to travel around the five boroughs. Operating in all five boroughs and carrying 7 million riders daily, the subway-the largest system in the world-is the heart of city transit. Trains operate 24/7. The cost of a single ride is \$2.75; unlimited pass options are also available.

Bus System: MTA public buses can be accessed from almost every other city block and also operate 24 hours. Public buses are a scenic way to see the City and reach destinations not convenient to a subway stop.

Taxis: Cabs can be hailed in any location and will drop you off exactly where you need to go. There is a minimum meter fare of \$3, with price increases based on a set time-cost formula based on the time of day. All taxis accept cash and credit cards for payment.

You can find information about events, attractions, transportation, and more about NYC here:

- NYC the official guide
<http://www.nyc.gov>

- The Official Website of the City of New York
<http://www1.nyc.gov/>

- Transportation
<http://www.nycgo.com/transportation/>

- Timeout: A guide to New York City with events, arts and culture, restaurants, theater, and nightlife
<http://www.timeout.com/newyork>

Assistance and Advice

If you need any kind of assistance, or are having any kind of trouble, please speak to one of the student volunteers or members of the local arrangement committee. They will be wearing identifying ribbons. Throughout the conference, volunteers will be available to answer questions and help out throughout the conference.

Participant Registration For IJCAI 2016

Registration desk will be located in the East Corridor, Second level of the Hilton. Office hours:

- Saturday through Wednesday: 8:00 am–5:00 pm
- Thursday: 8:00 am–2:00 pm
- Friday: 8:00 am–11:00 am

****Only credit card payments can be processed during the onsite registration period!****

Conference Venue

IJCAI-16, including workshops and tutorials, will be held at the New York Hilton Midtown Hotel, 1335 Avenue of the Americas, New York, New York. Located in the heart of New York City in Midtown Manhattan, this hotel is within walking distance from New York’s premier attractions such as Times Square, Radio City Music Hall, Fifth Avenue shopping, the Broadway Theatre District, Central Park, The Museum of Modern Art (MOMA) and many more iconic New York landmarks. IJCAI has reserved a block of sleeping rooms at the conference headquarters hotel, the New York Hilton Midtown Hotel, at reduced conference rates.

New York Hilton Midtown
1335 Avenue of the Americas
New York, New York 10019
USA

Tel: +1-212-586-7000
Fax: +1-212-315-1374

Both the opening reception on Monday and the banquet on Wednesday are in walking distance of the hotel.

Coffee Breaks And Lunch

On Saturday, Sunday, and Monday of the conference (workshops and tutorials), coffee breaks are scheduled from 10:30 to 11:00 and from 3:30 to 4:00. Lunch is scheduled from 12:45 to 1:45.

On Tuesday through Friday of the conference (main program), coffee breaks are scheduled from 11:05 to 11:35 and from 4:35 to 5:05. Lunch is scheduled from 12:35 to 2:00..

Restaurants

A list of nearby restaurants is included with the conference materials, or consult with websites such as <http://www.zagats.com> or <http://www.opentable.com>. There are about 2,000 restaurants in New York City, with every possible cuisine and price range.

Terms and Conditions Disclaimer

Cancellation and Changes

All cancellations must be sent to registration@ijcai.org via e-mail. Any change of name will be dealt with as a cancellation and a new registration. In case of cancellations until June 21, 2016, payments will be refunded less U\$100 processing fee. No refund will be made for cancellations received after June 21, 2016 or to the registrants who fail to attend.

In case of conference cancellation for reasons beyond the control of IJCAI-16 organizers or AAAI, the liability of the IJCAI-16 organizers and AAAI is limited to the fees already paid by the registrants. IJCAI-16 organizers and AAAI will not be responsible for any personal inconvenience that may arise.

General Disclaimer for Hotels and other service providers

In offering the New York Hilton Midtown Hotel, New York Area Airports, New York City and Airport public transportation system, Conferenceshare and all other service providers (hereinafter referred to as “Supplier(s)”organizers and AAAI act only in the capacity of agent for the Suppliers and have no control over personnel, equipment or operations or providers of accommodations or other services included as part of the IJCAI-16 program. The IJCAI-16 organizers and AAAI assume no responsibility for and will not be liable for any personal delay, inconvenience or other damage suffered by conference participants which may arise by reason of (1) any wrongful or negligent acts or omissions on the part of any Supplier or its employees, (2) any defect in or failure of any vehicle, equipment or instrumentality owned, operated or otherwise used by any Supplier, or (3) any wrongful or negligent acts or omissions on the part of any other party not under control, direct or otherwise, of the IJCAI-16 Organizers/AAAI.



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Please join us in Melbourne, Australia for IJCAI-17. The conference will be held August 19–25, 2017.

Several other AI events will be held in Melbourne and other parts of Australia close to these dates, offering attendees a variety of choices for an extended itinerary. These events will include the International Conference on Principles and Practice of Constraint Programming (CP), the International Conference on Theory and Applications of Satisfiability Testing (SAT), and the Australasian Joint Conference on Artificial Intelligence (AI); all to be held in Melbourne. The International Conference on Machine Learning (ICML) will also be held in Sydney Australia shortly before IJCAI 2017.

Melbourne is the capital of the state of Victoria and is Australia's second largest city. It is located near the South-Eastern tip of Australia on the large natural bay of Port Phillip. Melbourne is a dynamic and cosmopolitan city, featuring great restaurants offering a diverse range of cuisines. Melbourne also regards itself as being the cultural capital of Australia and has a very active art and music scene. The city has been ranked as the friendliest city in the world and as the world's most liveable city. Melbourne is also a great jumping off point for visiting Victoria's world-class wineries, natural springs, peninsulas, and spectacular coastline.

The conference will be held at the Melbourne Convention and Exhibition Centre, a space that has won numerous awards for its architecture and interior design. Conveniently located on the banks of the Yarra River the convention centre is within walking distance of the city centre and a wide range of restaurants and hotels, with options suitable for all budgets. The workshops and tutorials will be held at close by RMIT University, one of the largest universities in Australia. There is a free tram that runs between RMIT and a block away from the convention centre.

We look forward to seeing you in Melbourne for IJCAI 2017!

Schedule Overview

DATE	MORNING	AFTERNOON	EVENING
Saturday, July 9	Registration; Workshops; Tutorial	Registration; Workshops; Tutorial	
Sunday, July 10	Registration; Workshops; Tutorial	Registration; Workshops; Tutorial	
Monday, July 11	Registration; Workshops; Tutorial	Registration; Workshops; Tutorial	Reception, Museum of Modern Art
Tuesday, July 12	Technical Program**	Technical Program	
Wednesday, July 13	Technical Program	Technical Program	Banquet, Central Park Zoo
Thursday, July 14	Technical Program	Technical Program	Student Reception
Friday, July 15	Technical Program; Industry Day	AI Festival: IJCAI Awards; Industry Day; Closing Event	
**The Technical Program Tuesday, Wednesday, Thursday and Friday includes: Oral and poster presentation of research papers; Invited talks; Early Career Spotlight talks; Panels; Demonstrations; Exhibitions; and Competitions.			

An electronic version of the entire IJCAI-16 schedule is available via this link: <http://confer.csail.mit.edu/ijcai2016/schedule>

The schedule can also be downloaded to smartphones using the Confer app available at the link.

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