Preface

Recent highly visible and impactful applications of AI have resulted in tremendously increased public and commercial interest in AI. This interest is spurring large investments in the development of further applications of AI. Many of these applications, like autonomous cars and drones, personal assistants on mobile devices, and increased robotic automation of factories, have the potential to create major changes in society. As a result there has also been growing concern over the potential negative impacts of AI.

These developments inspired the theme of IJCAI-2017: Autonomy and AI. The aim of this year’s theme is to further debate and analysis of the limits and safeguards that must be established in order to ensure that AI research is used in a manner that best contributes towards a more just and prosperous society.

This year we received a record number of 2540 papers, accepting 660 (26%). All papers had an oral presentation and were also displayed as posters at the conference venue so as to facilitate better one-to-one interactions with the authors. Each paper received at least three reviews with most (80%) receiving four or more reviews. Every paper was monitored by one Senior Program Committee Member and one Area Chair. The Program Committee consisted of 44 Area Chairs, 384 Senior Program Committee Members, 1123 Program Committee Members and 392 Review Assistants. That is, a total of 1945 researchers made decisions.

We received 58 papers for the Track on autonomy and AI and accepted 12 covering different philosophical, ethical, legal and technical aspects. These papers were presented in special sessions with an open debate at the end. We also include in these proceedings abridged versions of previously published papers in major AI Journals (JAIR and AIJ) that had never been exposed in a major conference, and of the best papers of many specialised conferences on AI.

We had seven outstanding invited speakers, partly or totally touching upon Autonomy and the social benefits of AI: Georg Gottlob, Marti Hearst, Rong Jin, Ugo Pagallo, Joelle Pineau, Stuart Russell, and Tuomas Sandholm. Talks by the 2017 Computer and Thoughts Award winner Devi Parikh, and the 2017 John McCarthy Award winner Dan Roth were also featured.

A conference the size and scope of IJCAI-2017 requires tremendous effort from many people, to whom we are very thankful. First of all, the authors, who submitted the best of their work to this conference. IJCAI is such an outstanding conference thanks to the high respect that the whole community has on it. Second, the program committee members, that made an effort to cope with the deadlines, the heavy load of work, and the extra effort required by the several new features introduced this Year. Third, all the people that helped in the different stages of the review process. Francisco Cruz (aka Tito) and Marc Pujol who led the production of a new paper submission system for the proceedings, performing paper formatting quality control and giving professional feedback to authors. Francisco Cruz, Marc Pujol and Xavier Ferrer led the programming of a new user-friendly software to build the scientific program. Many others have helped in different phases of the process: Anna Enciso with multiple tedious clerical tasks; Thomas Preuss giving technical support on ConfMaster, sometimes at midnight and on weekends; Laurent Charlin making it easy to integrate TPMS in the process; Blai Bonet customising his software to allocate papers to reviewers, also over a weekend and under pressure; Jordi Levy and Mateu Villaret codifying the paper-to-session allocation as a SAT problem and solving it.

In addition to those whose work made the content of the conference possible, many worked to make the operation of the conference possible. The local arrangements committee (LAC) did a tremendous job for which we are very thankful. The LAC was co-chaired by Chengqi Zhang, Toby Walsh and Andy Song who all worked tirelessly to make IJCAI-2017 happen. Other members of the LAC included Michael Georgeff, Abdul Sattar Ling Chen, Yang Yu, Kai Qin, Truyen Tran, Tianqing Zhu, Ke Deng, Ping Yu, Christoph Bergmeir, Sebastian Sardina, Christian Guttmann, Jeffery Chan, and Guodong Long. We thank them all. Finally, last but by no means least we would like to thank Vesna Sabljakovic-Fritz, Executive Secretary for IJCAI, without
whom we would not have even known where to start!

Organising IJCAI-2017 has been a great experience that we are very grateful to have had, and we hope that the conference will be a great experience for everyone who participates.

- Carles Sierra (Program Chair)
- Fahiem Bacchus (Conference Chair)
IJCAI-17 Conference Organisation

Conference Committee

Conference Chair
Fahiem Bacchus (University of Toronto, Canada)

Program Chair
Carles Sierra (IIIA-CSIC, Catalonia, Spain)

Local Arrangements Committee Co-chairs
Chengqi Zhang (University of Technology Sydney, Australia)
Toby Walsh (University of New South Wales, Australia)
Andy Song (RMIT University, Australia)

IJCAI Executive Secretary
Vesna Sabljakovic-Fritz (Vienna University of Technology, Austria)

IJCAI Secretary-Treasurer
Bernhard Nebel (Albert-Ludwigs-Universität Freiburg, Germany)

Track Chairs

AI & Autonomy Track Chair
Mike Luck (King's College, London, EU)

Workshop Chair
Daniele Magazzeni (King's College, London, EU)

Tutorial Co-chairs
Kevin Leyton-Brown (University of British Columbia, Vancouver, Canada)
Andreas Krause (ETHZ, Switzerland)

Demonstration Track Chair
John Thangarajah (RMIT University, Australia)

Robot Competition and Exhibition Co-chairs
Sven Konig (University of Southern California, USA)
Maurice Pagnucco (University of New South Wales, Australia)

Doctoral Consortium Co-chairs
Maria Gini (University of Minnesota, USA)
Jimmy H. M. Lee (The Chinese University of Hong Kong, China)

Journal Track Chair
Peter Stone (University of Texas, USA)

Sister Conferences Best Paper Track Chair
Vaishak Belle (University of Edinburgh, EU)

Video Competition co-Chairs
Fiametta Ghedini (SONY CSL Paris)
Fabio Zambetta (RMIT University, Australia)

Advisory Committee

Abdul Sattar (Griffith University, Australia)
Lise Getoor (University of California, Santa Cruz, USA)
Malte Helmer (University of Basel, Switzerland)
Percy Liang (Stanford University, USA)
Emma Brunskill (Carnegie Mellon University, USA)
Edith Elkind (University of Oxford, United Kingdom)
Holger Hoos (University of British Columbia, Canada)
Karen Myers (SRI International, USA)
Peter Haddawy (Mahidol University, Thailand)
Fredrik Heintz (Linköping University, Sweden)
Adrian Pearce (University of Melbourne, Australia)

Local Arrangements Committee

Local Arrangements Committee Co-chairs
Chengqi Zhang (University of Technology Sydney, Australia)
Toby Walsh (University of New South Wales, Australia)
Andy Song (RMIT University, Australia)

Sponsorship Chair
Michael Georgeff (Precedence Health Care, Australia)

Co-Location Chair
Abdul Sattar (Griffith University, Australia)

Web Master
Ling Chen (University of Technology Sydney, Australia)

Publicity Chair
Yang Yu (Nanjing University, China)

Student Volunteer Co-chairs
Kai Qin (Swinburne University, Australia)
Truyen Tran (Deakin University, Australia)

Workshop Coordinator
Tianqing Zhu (Deakin University, Australia)

Tutorial Coordinator
Ke Deng (RMIT University, Australia)
Local Financial Chair
Ping Yu (Global Business College of Australia, Australia)

Social Events Co-ordinator
Toby Walsh (University of New South Wales, Australia)

Visa Coordinator
Christoph Bergmeir (Monash University, Australia)

Exhibition Chair
Sebastian Sardina (RMIT University, Australia)

Sponsorship Assistant
Christian Guttmann (University of New South Whales, Australia, and Karolinska Institutet, Sweden)

Industry Day Chair
Michael Georgeff (Precedence Health Care, Australia)

Job Match Coordinator
Guodong Long (University of Technology Sydney, Australia)

Accommodation Coordinator
Sankalp Khanna (CSIRO, Australia)
Program Committee

Main Track Program Committee

Area Chairs

Peter Stuckey (University of Melbourne, Australia)
Christian Bessiere (LIRMM-CNRS, EU)
Celine Robardet (LIRMM-CNRS, EU)
Wiebe van der Hoek (University of Liverpool, EU)
Fangzhen Lin (University of Science and Technology, China)
Chitta Baral (Arizona State University, USA)
Catholijn Jonker (Delft University of Technology, EU)
Ana Bazzan (Universidade Federal do Rio Grande do Sul, Brasil)
Craig Boutilier (University of Toronto, Canada)
Guillermo Simari (Universidad Nacional del Sur, Argentina)
Le Song (Georgia Institute of Technology, USA)
Jun Zhu (State Key Laboratory of Intelligent Technology and Systems, China)
Luc de Raedt (Catholic University of Leuven, EU)
Michelle Sebag (Laboratoire de Recherche en Informatique, CNRS, EU)
Floriana Esposito (University of Bari, EU)
Zhi-Hua Zhou (Nanjing University, China)
Isabel Trancoso (INESC-ID, EU)
Hector Geffner (Universitat Pompeu Fabra, EU)
Ronen Brafman (Ben-Gurion University, Israel)
Julie Shah (Massachusetts Institute of Technology, USA)
Luc de Raedt (Universitat Pompeu Fabra, EU)
Malte Helmert (University of Freiburg, EU)
Lijun Zhang (University of Technology Sydney, Australia)
Luis Marquez (Qatar Computing Research Institute, Qatar)
Subbarao Kambhampati (Arizona State University, USA)
Myra Spiliopoulou (Universität Magdeburg, EU)
Sheila McIlraith (University of Toronto, Canada)

Senior Program Committee Members

Agnar Aamodt (Norwegian University of Science and Technology, Department of Computer Science)
Sherief Abdallah (British University in Dubai, Faculty of engineering and IT)
Noa Agmon (Bar-Ilan University)
Guillem Alenyà (Institut de Robòtica i Informàtica Industrial CSIC-UPC)
Leila Amgoud (IRIT - CNRS)
Francesco Amigoni (Politecnico di Milano)
Bo An (Nanyang Technological University)
Aris Anagnostopoulos (Sapienza University of Rome)
Davide Anguita (University of Genova, DIBIRS - Department of Computer Science, Bioengineering, Robotics and Systems Engineering)
Cecilio Angulo (Universitat Politècnica de Catalunya, Knowledge Engineering Research Group)
Annalisa Appice (University of Bari Aldo Moro)
Katie Atkinson (University of Liverpool)
Leif Baarslag (Centrum Wiskunde & Informatica (CWI), University of Southampton)
Philip Bachman (Maluuba Research)
Christoffer Bäckström (Linköping University, Dept. of Computer and Information Science)
Xiang Bai (Huazhong University of Science and Technology)
Pietro Baroni (University of Brescia, DII)
Roman Bartak (Charles University, Czech Republic)
Sven Behnke (University of Bonn, Autonomous Intelligent Systems)
Francesco Belardinelli (Université d'Evry)
Heni Ben Amor (Arizona State University)
Maren Bennewitz (University of Bonn)
Alexandre Bernardino (Instituto Superior Técnico, Instituto de Sistemas e Robótica)
Isabelle Bichindaritz (State University of New York at Oswego)
Albert Bifet (Telecom ParisTech, 46 rue Barrault)
Mustafa Bilgic (Illinois Institute of Technology, Computer Science)
Elizabeth Black (King's College London)
Jeanette Bohg (Max Planck Institute for Intelligent Systems, Autonomous Motion Department)
Markus Böhl (SICS Swedish ICT Västerås AB, KTH Royal Institute of Technology)
Blaï Bonet (Universidad Simon Bolivar)
Chicago)  
Minlie Huang (Tsinghua University)  
Sheng-Jun Huang (NUAA)  
Pan Hui (The Hong Kong University of Science and Technology)  
Anthony Hunter (University College London, University College London)  
Frank Hutter (University of Freiburg)  
Ryutaro Ichise (National Institute of Informatics)  
Katsumi Inoue (NII)  
Manfred Jaeger (Aalborg University)  
Jianmin Ji (University of Science and Technology of China)  
Anders Jonsson (Universitat Pompeu Fabra)  
Alipio Jorge (University of Porto, FCUP - INESC TEC)  
Michael Kaess (Carnegie Mellon University)  
Ece Kamar (Microsoft Research)  
Byeong Kang (University of Tasmania)  
George Katsirelos (MIAT, INRA)  
Yiping Ke (Nanyang Technological University)  
Gabriele Kern-Isberner (TU Dortmund, Faculty of Computer Science)  
Kristian Kersting (TU Dortmund University)  
Christopher Kiekintveld (University of Texas at El Paso)  
Roman Klinger (University of Stuttgart, Institut for Natural Language Processing (IMS))  
Andrey Kolobov (Microsoft Research)  
George Konidaris (Brown University)  
Samantha Kleinberg (Stevens Institute of Technology)  
Hanna Kurniawati (University of Queensland, School of ITEE)  
Philippe Laborie (IBM France)  
Nicolas Lachiche (Université de Strasbourg)  
Gerhard Lakemeyer (RWTH Aachen University)  
Jerome Lang (CNRS and University Paris-Dauphine)  
Pat Langley (ISLE)  
Ni Lao (google)  
Kate Larson (University of Waterloo)  
Kathryn Blackmond Laskey (George Mason University)  
Chiraz Latiri (Tunis El Manar University, LIPAHT, Faculty of Sciences of Tunis)  
Hoong Chuiun Lau (Singapore Management University)  
Alessandro Lazaric (Inria Lille)  
Daniel Lee (University of Pennsylvania)  
Joohyung Lee (Arizona State University)  
Jin Young Lee (The Chinese University of Hong Kong)  
Yves Lesperance (York University, EECS Dept.)  
James Lester (North Carolina State University)  
Jordi Levy (IIIa-CSIC)  
Lei Li (Toutiao.com, Toutiao Lab)  
Lihong Li (Microsoft Corporation)  
Yu-Feng Li (Nanjing University)  
Jiuyong Li (The University of South Australia)  
Ming Li (Nanjing University)  
Gang Li (Deakin University, School of Information Technology)  
Chunh-Jung Liau (Academia Sinica, Institute of Information Science)  
Jean Lieber (Université de Lorraine, LORIA)  
Vladimir Lifschitz (University of Texas at Austin, Computer Science Department)  
Ming Lin (University of Michigan)  
Carlos Linares Lopez (Universidad Carlos III de Madrid, Computer Science Department)  
Michael Littman (Brown University, Computer Science)  
Weiru Liu (Queen’s University Belfast, School of EEECS)  
Tie-Yan Liu (Microsoft Research Asia)  
Qiang Liu (Dartmouth College)  
Meizhu Liu (Yahoo Research)  
Tongliang Liu (University of Technology Sydney)  
Daniel Lizotte (The University of Western Ontario)  
Jorge Lobo (ICREA and Universitat Pompeu Fabra)  
Corrado Loglisci (Università di Bari)  
Michele Lombardi (University of Bologna)  
Alessio Lomuscio (Imperial College London)  
Alneu Lopes (University of São Paulo, Institute of Mathematical and Computer Sciences)  
Xiaoqiang Lu (Chinese Academy of Sciences)  
Thomas Lukasiewicz (University of Oxford)  
Carsten Lutz (University of Bremen, Computer Science Department)  
Daniele Magazzeni (King’s College London, Department of Informatics)  
Ana Maguitman (Universidad Nacional del Sur, Institute for Computer Science and Engineering (ICIC CONICET-UNS))  
Donato Malerba (Università degli Studi di Bari "Aldo Moro", Consorzio Interuniversitario Nazionale per l’Informatica)  
Felip Manyà (IIIa-CSIC)  
Wenji Mao (Chinese Academy of Sciences, Institute of Automation)  
Stephane Marchand-Maillet (University of Geneva, Department of Computer Science / CUI)  
Janusz Marecki (DeepMind)  
Joao Marques-Silva (LaSIGE, University of Lisbon)  
Pierre Marquis (CRIL-CNRS and Université d’Artois)  
Ivan Marsa Maestre (University of Alcala)  
Stacy Marsella (Northeastern Univ)  
Jérémie Mary (Univ. Lille, Inria)  
Nicolas Maudet (Univ. Pierre et Marie Curie, LIP6)  
Wannes Meert (KU Leuven)  
Amnon Meisels (Ben-Gurion University, Dept. of Computer Science)  
Francisco Melo (Instituto Superior Tecnico, University of Lisbon, INESC-ID)  
Ernestina Menasalvas (universidad politecnica de madrid)  
Deyu Meng (Xi’an Jiaotong University)  
Aditya Menon (Data61)  
Rosa Meo (University of Torino)  
Thomas Meyer (University of Cape Town, Centre for Artificial Intelligence Research)  
Laurent Michel (University of Connecticut, Computer Science & Engineering Dept.)  
Michela Milano (Università di Bologna)  
Mirjam Minor (Goethe University Frankfurt)  
Sanjay Modgil (King’s College London)  
Roser Morante (VU University Amsterdam)
Leora Morgenstern (Leidos)
Martin Mueller (University of Alberta)
Marie-Laure Mugnier (University of Montpellier, LIRMM and Inria)
Jörg Müller (Technische Universität Clausthal, Department of Informatics)
Prelav Nakov (Qatar Computing Research Institute, HBKU)
Roberto Navigli (Sapienza University of Rome, Department of Computer Science)
Gerhard Neumann (University of Lincoln)
See-Kiong Ng (National University of Singapore, Institute of Data Science)
Thanh Nguyen (University of Michigan)
Siegfried Nijssen (Université catholique de Louvain)
Eirini Ntoutsi (Leibniz Universität Hannover, L3S Research Center)
Papini Odile (Aix Marseille University, LSIS)
Frans Oliehoek (University of Liverpool, University of Amsterdam)
Eva Onaindia (Universitat Politècnica de València)
Santiago Ontaño (Drexel University)
Nardine Osman (IIIA-CSIC)
John Paisley (Columbia University)
Panagiotis Papapetrou (Stockholm University)
Jong Park (KAIST, School of Computing)
Gabriella Pasi (University of Milano Bicocca, Department of Informatics, Systems and Communication)
Philippe Pasquier (Simon Fraser University)
Andrea Passerini (University of Trento)
Mykola Pechenizkiy (TU Eindhoven)
Xi Peng (Institute for Infocomm., Research Agency for Science, Technology and Research (A*STAR))
Pedro Pereira Rodrigues (University of Porto, Center for Health Technology and Services Research)
Gilles Pesant (Polytechnique Montreal, CIRRELIT)
Maria Silvia Pini (University of Padova)
Enric Plaza (IIIA-CSIC)
David Poole (University of British Columbia)
Leonard Poon (The Education University of Hong Kong)
Pascal Poupart (University of Waterloo, David R. Cheriton School of Computer Science)
Doina Precup (School of Computer Science, McGill University)
Ariel Procaccia (Carnegie Mellon University)
Chao Qian (University of Science and Technology of China)
Claude-Guy Quimper (Université Laval)
Zinovi Rabinovich (Nanyang Technological University, School of Computer Science and Engineering)
Iyad Rahwan (MIT)
Chedy Raïssi (INRIA)
Sarvapali Ramchurn (University of Southampton)
Fabio Ramos (University of Sydney)
Jinchang Ren (University of Strathclyde)
Marcello Restelli (Politecnico di Milano, Department of Electronics, Information and Bioengineering)
Mark Riedl (Georgia Institute of Technology)
M. Birna van Riemsdijk (TU Delft)
Jussi Rintanen (Aalto University, Department of Computer Science)
Marko Robnik-Sikonja (University of Ljubljana, Faculty of Computer and Information Science)
Juan Antonio Rodríguez-Aguilar (IIIA-CSIC)
Gabriele Röger (University of Basel)
Leonel Rozo (Istituto Italiano di Tecnologia)
Alessandro Saffiotti (Orebro University)
Scott Sanner (University of Toronto)
Sebastian Sardina (RMIT University)
Brian Scassellati (Yale University)
Torsten Schaub (University of Potsdam, University of Potsdam)
Pierre Schaus (ULouvain)
Thomas Schiex (INRA)
Christian Schulte (KTH & SICS)
Rico Sennrich (University of Edinburgh)
Pedro Sequeira (Northeastern University)
Guy Shani (Ben Gurion University, Software and Information Systems Engineering)
Jaime Sichman (University of São Paulo, Escola Politécnica)
Arundesh Sinha (University of Michigan, University of Michigan)
Shirin Sohrabi (IBM T.J. Watson Research Center)
Marina Sokolova (Institute for Big Data Analytics @ Dal U, University of Ottawa)
Nataliya Sokolovska (University Paris 6, INSERM)
Tran Son (New Mexico State University)
Mingli Song (Zhejiang University, College of Computer Science and Technology)
Leandro Soriano Marcolino (Lancaster University)
Mohan Sridharan (The University of Auckland, Electrical and Computer Engineering)
Siddharth Srivastava (United Technologies Research Center)
Cyril Stachniss (University of Bonn, Photogrammetry)
Kostas Stathis (Royal Holloway, University of London, Computer Science)
Georgina Stegmayer (CONICET)
Nathan Sturtevant (University of Denver)
Hang Su (Tsinghua University)
Masashi Sugiyama (RIKEN / The University of Tokyo)
Gita Sukthankar (University of Central Florida)
Kartik Talamadupula (IBM Research, T. J. Watson Research Center)
Pingzhong Tang (Tsinghua University, IIIS, Tsinghua)
Matt Taylor (Washington State University)
Isabelle Tellier (université Sorbonne Nouvelle - Paris 3, Lattice, CNRS)
Sylvie Thiebaux (Australian National University)
Matthias Thimm (University of Koblenz, Institute for Web Science and Technologies)
Marc Tommasi (University of Lille, INRIA Lille)
Hanghang Tong (ASU)
Marc Toussaint (University of Stuttgart)
Volker Tresp (Siemens AG)
Michael Trick (Carnegie Mellon, Tepper School of Business)
Charlotte Truchet (University of Nantes)
Mirek Truszczyński (University of Kentucky)
Ivor Tsang (University of Technology Sydney)
Grigoris Tsoumakas (Aristotle University of Thessaloniki)
Charalampos Tsourakakis (Boston University, Harvard University)
Kagan Tumer (Oregon State University)
Karl Tuyts (University of Liverpool)
Michal Valko (INRIA Lille - Nord Europe)
Guy Van den Broeck (University of California, Los Angeles)
Hans van Ditmarsch (LORIA)
M. Birna van Riemensdijk (TU Delft)
Michalis Vazirgiannis (Ecole Polytechnique)
Serena Villata (CNRS, Université Côte d’Azur, Inria, I3S)
Eugene Vorobeychik (Vanderbilt University, USA)
Christel Vrain (Université d’Orléans, LIFO)
Mark Wallace (Monash University, Faculty of Information technol-
ogy)
Toby Walsh (UNSW | Data61 | TU Berlin)
Kewen Wang (Griffith University)
Chong Wang (Microsoft Research, Microsoft Research)
Qi Wang (Northwestern Polytechnical University)
Takashi Washio (Osaka University, The Institute of Scientific and
Industrial Research)
Renata Wassermann (University of São Paulo)
Taro Watanabe (Google)
Paul Weng (SYSU-CMU JIE)
Nic Wilson (Insight - University College Cork, Department of Com-
puter Science)
Michael Winikoff (University of Otago, Department of Information
Science)
Martha White (Indiana University)
Frank Wolter (University of Liverpool)
Stefan Woltran (TU Wien)
Jia Wu (University of Technology Sydney)
Chang Xu (The University of Sydney)
Haiqin Yang (Hang Seng Management College, Department of Com-
puting)
Roland Yap (National University of Singapore)
William Yeoh (New Mexico State University)
Dit-Yan Yeung Yeung (Hong Kong University of Science and Tech-
nology)
Jianping Yin (National University of Defense Technology)
Jia-Huai You (University of Alberta)
Yang You (UC Berkeley, Computer Science Division)
Yang Yu (Nanjing University)
Anna Zamansky (University of Haifa)
Bruno Zanuttini (University of Caen Normandie)
Daniel Zeng (CAS Institute of Automation, University of Arizona)
De-Chuan Zhan (Nanjing University)
Yu Zhang (Arizona State University)
Xiangliang Zhang (King Abdullah University of Science and Tech-
nology (KAUST))
Xiaofeng Zhang (Harbin Institute of Technology, Shenzhen)
Kun Zhang (Carnegie Mellon University, Max Planck Institute for
Intelligent Systems)
Yue Zhang (Singapore University of Technology and Design)
Dongmo Zhang (Western Sydney University, School of Computing,
Engineering and Mathematics)
Min Zhang (Soochow University)
Min-Ling Zhang (Southeast University, School of Computer Science
and Engineering)
Jiajun Zhang (Institute of Automation Chinese Academy of Sciences)
Denny Zhou (Microsoft Research)
Hankz Zhuo (Sun Yat-Sen University)
Albrecht Zimmermann (Université Caen Normandie)
Wangmeng Zuo (Harbin Institute of Technology)

Program Committee Members

Henny Admoni (Carnegie Mellon University)
Núria Agell (ESADE Business School, Universitat Ramon Llull)
Adrian Agogino (NASA Ames Research Center)
Baris Akgun (Koc University)
Stefano Albrecht (The University of Texas at Austin, Department of
Computer Science)
Natasha Alechina (University of Texas at Austin, Department of
Computer Science)
Ronald Alford (MITRE)
Thomas Allen (Centre College)
Eduardo Alonso (City, University of London)
Laura Alonso Alemany (Universidad Nacional de Córdoba, Facultad
de Matemática, Astronomía y Física)
Javier Alonso-Mora (Delft Technical University, Delft Center for
Systems and Control)
Klaus-Dieter Althoff (University of Hildesheim, Institute of Com-
puter Science)
Mario Alviano (University of Calabria, Department of Mathematics
and Computer Science)
Chris Amato (Northeastern University)
Ofra Amir (Harvard University)
Fabrizio Angiulli (University of Calabria, DINES)
Luca Anselmi (Dipartimento di Informatica, Università di Torino)
Carlos Ansótegui (University of Lleida)
Athirai Aravazhi Irissappane (University of Washington)
Alejandro Arbelaez (University College Cork, Insight Centre for
Data Analytics)
Liliana Ardissono (University of Torino, Computer Science Depart-
ment)
Christian Artigues (LAAS-CNRS)
Alexander Artikis (University of Piraeus, NCSR Demokritos)
Guillaume Aucher (University of Rennes 1)
Gilles Audemard (Université d’Artois)
Juan Carlos Augusto (Middlesex University)
Haris Aziz (Data61 and UNSW)
Kerstin Bach (Norwegian University of Science and Technology
(NTNU))
Aijun Bai (University of California, Berkeley)
Quan Bai (Auckland University of Technology)
Matteo Baldoni (University of Torino)
Marcello Balduccini (Drexel University)
Miguel Ballesteros (IBM Research)
Tomas Balyo (Karlsruhe Institute of Technology)
Mutsumori Banbara (Kobe University)
Marina Bannikova (Universitat Autonoma de Barcelona, Universitat
de Girona)
Alberto Barron-Cedeno (Qatar Computing Research Institute)
Rodrigo Barros (Pontificia Universidade Católica do Rio Grande do Sul)
Georg Bartels (University of Bremen)
Valerio Basile (INRIA)
Nicola Basilico (University of Milan, Department of Computer Science)
Ringo Baumann (Leipzig University)
Dorothea Baumeister (University of Duesseldorf, Institute for Computer Science)
Daniel Beck (The University of Melbourne)
Rahmatollah Beheshti (Johns Hopkins University)
Jens Behley (University of Bonn, Department of Photogrammetry)
Christoph Beierle (University of Hagen)
Nicolas Beldiceanu ( Mines Nantes)
Vaishak Belle (University of Edinburgh)
Mohammed Bennamoun ( The University of Western Australia)
J. Benton (NASA Ames Research Center)
David Bergman (University of Connecticut)
Ralph Bergmann (Trier University)
Sara Bernardini ( Royal Holloway University of London, King’s College London)
Abraham Bernstein (University of Zurich)
Tarek R. Besold (University of Bremen, Center for Computing and Communication Technologies (TZI))
Alex Bewley (Oxford University, Queensland University of Technology)
Floris Bex (Utrecht University, Department of Information and Computing Sciences)
Aurélie Beynier (Université Pierre et Marie Curie)
Armin Biere ( Johannes Kepler University)
Antonis Bikakis (University College London)
Lidong Bing (Tencent Inc., AI Platform Department)
Arianna Bisazza (University of Amsterdam)
Daan Bloembergen (University of Liverpool)
Michelle Blom (University of Melbourne)
Christian Blum (IIIA-CSIC)
Branislav Bošanský (Czech Technical University in Prague)
Alexander Bochman (Holon Institute of Technology)
Miquel Bofill (University of Girona, Department of Computer Science, Applied Mathematics and Statistics)
Bart Bogaerts (KU Leuven)
Olivier Boissier (Mines Saint-Etienne, Laboratoire Hubert Curien UMR 5516 CNRS)
Danushka Bollegala (University of Liverpool, Department of Computer Science)
Ladislau Boloni (University of Central Florida)
Maria Luisa Bonet (Universidad Politecnicade Catalunya)
Gregory Bonnet (Normandy University, GREYC)
Richard Booth (Cardiff University)
Gloria Bordogna (CNR IREA)
Stefan Borgwardt (Technische Universität Dresden)
Adi Botea (IBM Research)
Sylvain Bouveret (LIG, Université Grenoble-Alpes, Grenoble INP)
Marco Bozzano (Fondazione Bruno Kessler)
Simina Brânzei (Hebrew University of Jerusalem)
Aranosa Brandão (Departamento de Engenharia de Computação e Sistemas Digitais (PCS), Brazil)
Florian Brandl (Technical University of Munich, Department of Informatics)
Felix Brandt (Technical University of Munich)
Pavel Brazdil (University of Porto, LIAAD Inesc Tec)
Robert Bredereck (University of Oxford)
Gerhard Brewka (Leipzig University)
Markus Brill (TU Berlin)
Stefano Bromuri (Open University of The Netherlands, BISS institute in Heerlen)
Ken Brown (University College Cork, Insight centre for data analytics, Dept of Computer Science)
Daniel Bryce (SIFT, LLC.)
Katarzyna Budzynska (Polish National Academy of Sciences (Poland), University of Dundee (UK))
Olivier Buffet (INRIA, LORIA)
Nils Bulling (Digital Customer Experience, Capgemini)
Neil Burch (University of Alberta, Computing Science)
Robin Burke (DePaul University)
Marlos C. Machado (University of Alberta)
André C.P.L.F. de Carvalho (University of São Paulo, Brazil)
Pedro Cabalar (University of Corunna)
Elena Cabrio (Université Côte d’Azur, CNRS, Inria, I3S, France)
Shaowei Cai (Institute of Software, Chinese Academy of Sciences)
Olivier Cailloux (Paris-Dauphine)
Roberto Calandra (University of California Berkeley)
Carlos Caleiro (Universidade de Lisboa, Instituto Superior Técnico, Dep. Mathematics and SQIG-Instituto de Telecomunicações)
Martin Caminada (Cardiff University)
Marie Candito (Paris Diderot University)
Jiannong Cao (Hong Kong Polytechnic University)
Clément Carbonnel (LAAS-CNRS)
Amilcar Cardoso (University of Coimbra, Centre for Informatics and Systems of the University of Coimbra)
Luciano Caroprese (University of Calabria, DIMES)
Ivan Palomares Carrascosa (Queen’s University Belfast, Dr)
Joao Paulo Carvalho (Inesc-ID / Instituto Superior Técnico, Universidad de Lisboa)
Ana Casali (Universidad Nacional de Rosario, CIFASIS)
Tommaso Caselli (Vrije Universiteit Amsterdam)
Alessandro Casini (University of Florence, Italy)
Bruno Castro da Silva (Federal University of Rio Grande do Sul)
Marie-Liesse Cauwet (University of Liege)
Sofia Ceppi (University of Edinburgh)
Federico Cerutti (Cardiff University, Cardiff University)
İsmail İlkan Ceylan (TU Dresden)
Iadine Chades (CSIRO)
Luiz Chaimowicz (UFMG)
Hau Chan (Trinity University)
Rosa Chan (City University of Hong Kong, Department of Electronic
Daniel Kappler (Max Planck Institute for Intelligent Systems)
Debarun Kar (University of Southern California)
Ioannis Karamouzas (Clemson University, University of Minnesota)
Isak Karlsson (Stockholm University)
Lars Karlsson (Örebro University, Department for Science and Technology)
Erez Karpas (Technion)
Hitashi Kashima (Kyoto University)
Ioannis Katakis (National and Kapodistrian University of Athens, Department of Informatics and Telecommunications)
Yoshinobu Kawahara (Osaka University)
Mehdi Kaytoue (INSA Lyon)
Yevgeny Kazakov (University of Ulm)
Thomas Keller (University of Basel)
Paul Kennedy (University of Technology Sydney, Faculty of Engineering and IT)
Ankesh Khandelwal (Amazon)
Tushar Khot (Allen Institute for Artificial Intelligence)
Philip Kilby (Data61, Australian National University)
Jung Jae Kim (Institute for Infocomm Research, Singapore)
Jin-Dong Kim (Database Center for Life Science, Database Center for Life Science)
Kee-Eung Kim (KAIST)
Joris Kinable (Carnegie Mellon University, Carnegie Mellon University)
Michael Kirley (The University of Melbourne)
Akihiro Kishimoto (NTT, Japan)
Zeynep Kiziltan (University of Bologna)
Franziska Klügl (Örebro University)
Martin Kronegger (Johannes Kepler University Linz, Austria, TU Wien, Austria)
Louwe B. Kuijer (University of Liverpool)
Akshat Kumar (Singapore Management University)
Clemens Kapke (University of Strathclyde)
Ondrej Kuzelka (Cardiff University, School of Computer Science and Informatics)
Ville Kyrki (Aalto University)
Maria Kyropoulou (University of Oxford)
Christophe Laharde (Thales Research & Technology)
Bruno Lacerda (University of Birmingham)
Martin Lackner (University of Oxford)
Jean-Marie Lagrue (CRIL, University of Artois)
Sylvain Lagrue (Université d'Artois, CRIL - UMR 8188 CNRS)
Kiran Lakkaraju (Sandia National Labs)
Luis Lamb (Federal University of Rio Grande do Sul)
Xiangyuan Lan (Hong Kong Baptist University, Department of Computer Science)
Marc Lanctot (DeepMind)
Helge Langseth (Norwegian University of Science and Technology, Department of Computer and Information Science)
Frédéric Lardeux (University of Angers)
Pedro Larrañaga (Technical University of Madrid)
Jey Han Lau (IBM Research)
Niklas Lavesson (Blekinge Institute of Technology)
Jonathan Lawry (University of Bristol, Engineering Mathematics)
Tiep Le (New Mexico State University)
Daniel Le Berre (Université d’Artois, CNRS)
Hoel Le Capitaine (University of Nantes)
Christophe Leconte (University of Artois, CRIL)
Freddy Lecue (INRIA, Accenture Tech Labs)
Fabrice Lefèvre (Univ. Avignon, LIA-CERI)
Iolanda Leite (KTH)
Joao Leite (Universidade NOVA de Lisboa, NOVA LINCS)
Levi Lelis (Universidade Federal de Viçosa)
Domenico Lembo (Sapienza università di Roma)
Philippe Leray (University of Nantes)
Julien Lesca (Paris Dauphine University, LAMSADE)
Joshua Letchford (Sandia National Laboratories)
Omer Lev (University of Toronto)
Yoad Lewenberg (The Henrew University of Jerusalem)
Olivier Lhomme (IBM France)
Jundong Li (Arizona State University, Arizona State University)
Cheng-Te Li (National Cheng Kung University)
Ping Li (Hangzhou Dianzi University, National University of Singapore)
Wenyu Li (The Chinese University of Hong Kong (Shenzhen), School of Science and Engineering)
Zechao Li (Nanjing University of Science and Technology)
Bo Li (University of Michigan)
Jun Li (Northeastern University)
Sheng Li (Northeastern University)
Boyang Li (Disney Research)
Sanjiang Li (University of Technology Sydney)
Bin Li (Wuhan University)
Chao Zhang (Facebook Inc.)
Shanshan Zhang (Max Planck Institute for Informatics)
Guofeng Zhang (State Key Lab of CAD&CG, Zhejiang University)
Jie Zhang (Nanyang Technological University)
Yu Zhang (Hong Kong University of Science and Technology)
Lin Zhang (Tongji University)
Heng Zhang (Huazhong University of Science and Technology)
Junhuan Zhang (School of Economics and Management, Beihang University, Department of Finance)
Yuting Zhang (University of Technology Sydney)
Shiqi Zhang (Cleveland State University)
Yuchen Zhang (Stanford University)
Hongyang Zhang (Carnegie Mellon University, Machine Learning Department)
Junhuan Zhang (School of Economics and Management, Beihang University, Department of Finance)
Yongfeng Zhang (University of Massachusetts Amherst)
Hongyang Zhang (Carnegie Mellon University, Machine Learning Department)
Yuting Zhang (University of Michigan)
Daoqiang Zhang (Nanjing University of Aeronautics and Astronautics)
Dengji Zhao (University of Southampton, ShanghaiTech University)
Qian Zhao (City University of Hong Kong)
Handong Zhao (Northeastern University)
Peilin Zhao (Ant Financial)
Wayne Xin Zhao (Renmin University of China)
Yi Chen (LinkedIn)
Feng Zheng (University of Sheffield)
Shuo Zhou (University of Melbourne, Department of Computing and Information Systems)
Joey Tianyi Zhou (Institute of High Performance Computing)
Aimin Zhou (East China Normal University)
Hao Zhou (Nanjing University)
Chuan Zhou (Chinese Academy of Sciences)
Hao Zhou (University of New York)
Xuezhong Zhou (Beijing Jiaotong University)
Linhong Zhu (Information Sciences Institute, University of Southern California)
Jianke Zhu (Zhejiang University)
Tianqing Zhu (Deakin University)
En Zhu (National University Defense Technology)
Zexuan Zhu (Shenzhen University)
Pengfei Zhu (Tianjin University)
Zhiqiang Zhuang (Griffith University)
Lansheng Zhuang (University of Science and Technology of China)
Zhu Zichen (Tencent Technology, AI Platform)
Yair Zick (National University of Singapore, School of Computing)
Antoine Zimmermann (École des mines de Saint-Étienne, Laboratoire Hubert Curien)
Roie Zivan (Ben Gurion University of the Negev)
Alexander Zook (Georgia Institute of Technology)
Blaz Zupan (University of Ljubljana, Faculty of Computer and Information Science)

Homayun Afrabandpey (Aalto University)
Ahmad Ahmadv (TU Dresden)
Samet Ahmed (University of Rennes 1)
Özgür Akgün (University of St Andrews)
Amir Alansary (Imperial College London)
Marco Alberti (University of Ferrara)
Elias Alevizos (IIT Demokritos)
Aldeida Aleti (Monash University)
Bander Alsulaimi (Drexel University)
David Aparicio (University of Porto)
Miguel Araújo (University of Porto)
Marcelo G. Armentano (ISISTAN (UNICEN/CONICET))
Frederic Armetta (University of Lyon - LIRIS laboratory)
Alessandro Artale (Free University of Bozen-Bolzano)
Víctor Ayzenshtadt (University of Hildesheim)
Josef Bajada (King's College London)
Avinash Balakrishnan (IBM Research)
Benoît Barbot (LACL, Université Paris Est Creteil)
Francesco Barile (University of Naples Federico II)
Ghazaleh Beigi (Arizona State University)
Aimeen Bellodi (INSA de Lyon)
Elena Bellodi (University of Ferrara)
Gleb Belov (Monash University)
Jonathan Ben-Naim (University of Toulouse, CNRS)
Ahmed Anes BENDIMERAD (LIRIS)
Chris Bingham (Crimson Hexagon)
Joschka Bödecker (University of Freiburg)
Kyle Booth (University of Toronto)
Ahcène Boubekki (Leuphana University)
Zied Bouraoui (Cardiff University)
Camille Bourgoux (TU Dresden)
Markus Brenner (Ulm University)
Deng Cai (Zhejiang University)
Daniele Calandrelli (Inria)
Diego Calvanese (Free University of Bozen-Bolzano)
Alberto Camacho (University of Toronto)
Tran Cao Son (New Mexico State University)
Mikael Capelle (Thales Alenia Space France)
Alan Carlin (Aptima, Inc.)
Mats Carlsson (SICS)
David Carral (TU Dresden)
Margarita Castro (University of Toronto)
Andrea Celli (Politecnico di Milano)
Hau Chan (Trinity University)
Jie Chen (Singapore-MIT Alliance for Research and Technology)
Cheng Chen (University of Illinois at Chicago)
Zhourong Chen (The Hong Kong University of Science and Technology)
De Cheng (Xi'an Jiaotong University)
kewei cheng (Arizona State University)
Wen-Huang Cheng (Academia Sinica)
Zhi-Qi Cheng (Southwest Jiaotong University)
Leroy Chew (University of Leeds)
Jeremie Clos (Robert Gordon University)
Raphael Côbe (Sao Paulo State University)

Review Assistants

Somak Aditya (Arizona State University)
Patrick Koopmann (Technische Universität Dresden)
Panagiotis Korvesis (Ecole Polytechnique)
Adam Kosiorek (University of Oxford)
Aris Kosmopoulos (IIT Demokritos)
Dimitris Kotsakos (University of Athens)
Dimitrios Kotzias (University of California Irvine)
Sebastian Krause (German Research Center for Artificial Intelligence (DFKI))
Anastasia Krithara (IIT Demokritos)
Panagiotis Korvesis (Ecole Polytechnique)
Adam Kosiorek (University of Oxford)
Aris Kosmopoulos (IIT Demokritos)
Dimitris Kotsakos (University of Athens)
Dimitrios Kotzias (University of California Irvine)
Sebastian Krause (German Research Center for Artificial Intelligence (DFKI))

Patrick MacAlpine (University of Texas at Austin)
Sebastian Mair (Leuphana University of Lüneburg)
Letizia Marchegiani (University of Oxford)
Alberto Marchesi (Politecnico di Milano)
Elisa Marengo (Free University of Bozen-Bolzano)
Ofr Marom (University of the Witwatersrand)
Johannes Marti (University of Strathclyde)
Germán Martin García (Universitat Bonn)
Fernando Martínez-Plumed (Universitat Politècnica de València)
Maximilian Marx (Technische Universität Dresden)
Aldo Marzullo (University of Calabria)
Luke Mathieson (University of Technology Sydney)
Alessandro Mazzei (Università di Torino (Italy))
Steven G McDonagh (Imperial College London)
Polykarpos Meladianos (AUEB)
Xuying Meng (Chinese Academy of Sciences)
Emanuela Merelli (University of Camerino)
Radu-Casian Mihăescu (Malmo University)
Humera Noor Minhas (Cliqz GmbH)
Reuth Mirsky (Ben Gurion University)
Arindam Mitra (Arizona State University)
Thierry Moisan (IDA Software)
Ariel Monteserin (ISISTAN (CONICET-UNICEN))
Maxime Morge (Univ. Lille)
Atena MTabakhi (New Mexico State University)
Pradeep K. Murukannaiah (Rochester Institute of Technology)
Kamran Najeebullah (University of New South Wales)
Claudia Nalon (University of Brasilia)
Jinseok Nam (TU Darmstadt)
Margaux Nattaf (Laboratoire d'Analyse et d'Architecture des Systèmes (LAAS-CNRS))
Radim Nedbal (FBK)
Thien Huu Nguyen (New York University)
Giannis Nikolentzos (Athens University of Economics and Business)
Gang Niu (University of Tokyo)
Cicero Nogueira dos Santos (IBM)
Jawad Omari (RISE SICS)
David Orden Martín (Universidad de Alcalá)
Yousouf Oualhadj (UPEC)
Jacopo Panerati (Polytechnique Montreal)
Anastasia Paparrizou (CNRS-CRIL)
Pedro Paredes (University of Porto)
Fabio Patrizi (Sapienza University of Rome)
Thiago Paulo (Universidade de Brasília)
Tomi Peltola (Aalto University)
André Grahl Pereira (Federal University of Rio Grande do Sul)
José Luis Pérez de la Cruz Molina (Universidad de Málaga)
Dominik Peters (University of Oxford)
François Petitjean (Monash University)
Andreas Pfandler (TU Wien and University of Siegen)
Rens Philippen (TU Delft)
Longjian Piao (Delft University of Technology)
Karl Pichotta (University of Texas at Austin)
Eric Piette (Université d’Artois)
Wei Ping (Baidu Silicon Valley AI Lab)
Albert Pla Planas (University of Oslo)
Quentin Plazar (Inria Rennes)
Nicolas Prucovic (Aix-Marseille University)
Anna Puig (Universitat de Barcelona)
Artem Pyatkin (University of Strathclyde)
Hong Qian (Nanjing University)
Mohamed Rahal (VEDECOM Institute)
Maria Jose Ramirez (Universidad Politècnica de València)
Changhe Yuan (CUNY Queens College)
Guangchao Yuan (Microsoft)
Yuan Yuan (the Hong Kong University of Science and Technology)
Yuri Zagorulko (University Library in Zagreb)
Ming Zeng (Carnegie Mellon University)
Riccardo Zese (University of Ferrara)
Zhe Zhang (IBM Watson)
Zhifei Zhang (Tongji University)
Yuhong Zhang (Hefei University of Technology)
Sicheng Zhao (Tsinghua University)
Xiaowei Zhao (Northwest University)
Liming Zhao (Zhejiang University)
Keran Zhao (University of Illinois at Chicago)
Qibin Zhao (Research Scientist, RIKEN Brain Science Institute)
Yu Zhu (Zhejiang University)
Feida Zhu (Singapore Management University)
Linhong Zhu (University of Southern California)
Feida Zhu (The University of Hong Kong)
Luisa Zintgraf (Vrije Universiteit Brussel)
Aviv Zohar (The Hebrew University)
Yang Zou (Carnegie Mellon University)
Ingrid Zukerman (Monash University)

AI & Autonomy Program Committee

Senior Program Committee

Kevin Ashley (University of Pittsburgh)
Gregory Bonnet (Normandy University)
Joanna Bryson (University of Bath)
Kerstin Dautenhahn (University of Hertfordshire)
Esther David (Ashkelon Academic College)
Louise Dennis (University of Liverpool)
Marie-Pierre Gleizes (University of Toulouse)
Nick Hawes (University of Birmingham)
Jeroen Hunter (British Columbia Institute of Technology)
Louise Keppens (King’s College London)
Xudong Luo Sun (Yat-sen University)
Henri Prakken (Utrecht University)
Zinovi Rabinovich (Nanyang Technological University)
Michael Rovatsos (University of Edinburgh)
Bill Smart (Oregon State University)
Catherine Tessier (ONERA)
Gregory Wheeler (Frankfurt School of Finance and Management)
V Yampolskiy (University of Louisville)
Pinar Yolum (Bogazici University)

Program Committee

Jonathan Aitken (University of Sheffield)
Alexander Artikis (University of Piraeus)
Reyhan Aydogan (Ozyegin University)
Rina Azoury (Jerusalem College of Technology)
Cristina Baroglio (Università degli Studi di Torino)
Vaishak Belle (University of Edinburgh)

Floris Bex (Utrecht University)
Thomas Bolander (Technical University of Denmark)
Ioana Boureanu (University of Surrey)
Gauvin Bourgne (Sorbonnes Universités - UPMC)
Ayling Caliskan (Princeton University)
Ipek Caliskanelli (University of Salford)
Pompeu Casanovas (Universitat Autónoma de Barcelona)
Sofia Ceppi (University of Edinburgh)
Georgios Chalkiadakis (Technical University of Crete)
Amit Chopra (Lancaster University)
William John (Curran Oregon State University)
David Danks (Carnegie Mellon University)
Prashant Doshi (University of Georgia)
John Folkeson (KTH)
Matthias Grabmair (Carnegie Mellon University)
Akin Gunay (Lancaster University)
The Anh Han (Teesside University)
Marc Hanheide (University of Lincoln)
Yichuan Jiang (Southeast University)
Maryam Kamali (University of Liverpool)
Lars Kunze (University of Birmingham)
Bruno Lacerda (University of Birmingham)
Charles Leslie (ONERA)
Ho-fung Leung (The Chinese University of Hong Kong)
Enrique Munoz de Corte (PROWLER.io)
Matthias Nickles (National University of Ireland)
Julian Padget (University of Bath)
Antonino Rotolo (University of Bologna)
Selma Sabanovic (Indiana University Bloomington)
Filippo Santoni de Sio (Delft University of Technology)
Giovanni Sartoi (CIRSFID, University of Bologna)
Burkhard Schafer (University of Edinburgh)
Matthias Scheutz (Tufts University)
Zhongzhi Shi (Chinese Academy of Sciences)
Tammar Shrot (Shamoon College of Engineering)
Marija Slavkovik (University of Bergen)
Francesco Trovò (Politecnico di Milano)
Bart Verheij (University of Groningen)
Bao YSwinburne (University of Technology)
Yueh-Hsuan Weng (Tohoku University)

Program Committee of the Sister Conference Best Paper Track

Raffaella Bernardi (University of Trento)
Jens Clayen (RWTH Aachen University)
Esra Erdem (Sabanci University)
Gabriell Kern-Iserner (TU Dortmund)
Nir Lipovetzky (University of Melbourne)
Thomas Lukasiewicz (University of Oxford)
Adrian Pearce (The University of Melbourne)
Peter Schueller (Marmara University)
Steven Schockaert (Cardiff University)
Hannes Strass (Leipzig University)
Shahab Tasharrofi (Aalto University)
IJCAI-17 Sponsorship

Platinum
Victoria Government
Melbourne Convention Bureau
Artificial Intelligence Journal
Alibaba Group
Xiao
Tencent
JD.com
Meitu Inc.
Didi ChuXing
Baidu
Ant Financial Service Group

Gold
Australian Computer Society
National Science Foundation

Silver
University of Technology Sydney
Griffith University
The University of Sydney
Royal Melbourne Institute Technology University
Melbourne University
Australian National University
King Abdullah University of Science and Technology

Awards and Distinguished Papers

The IJCAI-17 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-17 Awards Selection Committee, which consists this year of:

- Craig Boutilier, University of Toronto (CANADA) and Google (USA)
- Yolanda Gil, University of Southern California (USA)
- Joelle Pineau, McGill University (CANADA)
- Francesca Rossi, University of Padova (ITALY) and
- Qiang Yang, Hong Kong University of Science and Technology (Chair) (HONG KONG, CHINA)

The IJCAI Awards Selection Committee receives advice from members of the IJCAI-17 Awards Review Committee, who comment on the accuracy of the nomination material and provide additional information about the nominees. The IJCAI-17 Awards Review Committee is the union of the former Trustees of IJCAI, the IJCAI-17 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-17 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 throughout an entire career yielding several substantial results. Past recipients of this honor are the most illustrious group of scientists from the field of Artificial Intelligence.


The winner of the 2017 Award for Research Excellence is Andrew Barto, Professor Emeritus, College of Information and Computer Sciences, University of Massachusetts Amherst. Professor Barto is recognized for his groundbreaking and impactful research in both the theory and application of reinforcement learning.

IJCAI-17 Computers and Thought Award:


The winner of the 2017 IJCAI Computers and Thought Award is Devi Parikh, Assistant Professor at School of Interactive Computing, Georgia Institute of Technology. Professor Parikh is recognized for her contributions at the intersection of words, pictures, and common sense --- from semantic image understanding, to the use of visual attributes for human-machine collaboration and visual abstractions for learning common sense, to enabling humans to interact with visual content via natural language.

IJCAI-17 John McCarthy Award:

The IJCAI John McCarthy Award is intended to recognize established mid-career researchers, typically between fifteen to twenty-five years after obtaining their PhD, that have built up a major track record of research excellence in artificial intelligence. Nominees 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.

Past recipients of this honor have been: Bart Selman (2015) and Moshe Tenenbaum (2016).

The winner of the 2017 John McCarthy Award is Dan Roth, The Beckman Institute, University of Illinois at Urbana-Champaign. Professor Roth is recognized for major conceptual and theoretical advances in the modeling of natural language understanding, machine learning and reasoning.

Donald E. Walker Distinguished Service Award:


At IJCAI-17, the Donald E. Walker Distinguished Service Award will be given to Ramon López de Mántaras, Research Professor of the Spanish National Research Council (CSIC) and Director of the Artificial Intelligence Research Institute of the CSIC. Professor López de Mántaras is recognized for his substantial contributions, as well as his extensive service to the field of Artificial Intelligence throughout his career.

Distinguished Papers

Finalists for Distinguished Paper
Mark Kaminski, Bernardo Cuenca Grau, Egor V. Kostylev, Boris Motik, Ian Horrocks: Foundations of Declarative Data Analysis Using Limit Datalog Programs

Abstract: Motivated by applications in declarative data analysis, we study DatalogZ---an extension of positive Datalog with arithmetic functions over integers. This language is known to be undecidable, so we propose two fragments. In limit DatalogZ predicates are axiomatised to keep minimal/maximal numeric values, allowing us to show that fact
entailment is coNExpTime-complete in combined, and coNP-complete in data complexity. Moreover, an additional stability requirement causes the complexity to drop to ExpTime and PTime, respectively. Finally, we show that stable DatalogZ can express many useful data analysis tasks, and so our results provide a sound foundation for the development of advanced information systems.

Frédéric Koriche, Sylvain Lagruè, Éric Piette, Sébastien Tabary: Constraint-Based Symmetry Detection in General Game Playing

Abstract: Symmetry detection is a promising approach for reducing the search tree of games. In General Game Playing (GGP), where any game is compactly represented by a set of rules in the Game Description Language (GDL), the state-of-the-art methods for symmetry detection rely on a rule graph associated with the GDL description of the game. Though such rule-based symmetry detection methods can be applied to various tree search algorithms, they cover only a limited number of symmetries which are apparent in the GDL description. In this paper, we develop an alternative approach to symmetry detection in stochastic games that exploits constraint programming techniques. The minimax optimization problem in a GDL game is cast as a stochastic constraint satisfaction problem (SCSP), which can be viewed as a sequence of one-stage SCSPs. Minimax symmetries are inferred according to themes provided by the standard Monte Carlo Tree Search algorithms, coupled with rule-based symmetry detection. Based on a theoretical analysis of this approach, we show that the recent stochastic constraint solver MAC-UCB, coupled with constraint-based symmetry detection, significantly outperforms the standard Monte Carlo Tree Search algorithms, coupled with rule-based symmetry detection. This constraint-driven approach is also validated by the excellent results obtained by our player during the last GGP competition.

Yong Luo, Yonggang Wen, Tongliang Liu, Dacheng Tao: General Heterogeneous Transfer Distance Metric Learning via Knowledge Fragments Transfer

Abstract: Transfer learning aims to improve the performance of target learning task by leveraging information (or transferring knowledge) from other related tasks. Recently, transfer distance metric learning (TDML) has attracted lots of interests, but most of these methods assume that feature representations for the source and target learning tasks are the same. Hence, they are not suitable for the applications, in which the data are from heterogeneous domains (feature spaces, modalities and even semantics). Although some existing heterogeneous transfer learning (HTL) approaches are able to handle such domains, they lack flexibility in real-world applications, and the learned transformations are often restricted to be linear. We therefore develop a general and flexible heterogeneous TDML (HTDML) framework based on the knowledge fragment transfer strategy. In the proposed HTDML, any (linear or nonlinear) distance metric learning algorithms can be employed to learn the source metric beforehand. Then a set of knowledge fragments are extracted from the pre-learned source metric to help target metric learning. In addition, either linear or nonlinear distance metric can be learned for the target domain. Extensive experiments on both scene classification and object recognition demonstrate superiority of the proposed method.

Finalists for Distinguished Student Paper

Chaoyue Wang, Chaohui Wang, Chang Xu, Dacheng Tao: Tag Disentangled Generative Adversarial Network for Object Image Re-rendering

Abstract: In this paper, we propose a principled Tag Disentangled Generative Adversarial Networks (TD-GAN) for re-rendering new images for the object of interest from a single image of it by specifying multiple scene properties (such as viewpoint, illumination, expression, etc.). The whole framework consists of a disentangling network, a generative network, a tag mapping net, and a discriminative network, which are trained jointly based on a given set of images that are completely/partially tagged (i.e., supervised/semi-supervised setting). Given an input image, the disentangling network extracts disentangled and interpretable representations, which are then used to generate images by the generative network. In order to boost the quality of disentangled representations, the tag mapping net is integrated to explore the consistency between the image and its tags. Furthermore, the discriminative network is introduced to implement the adversarial training strategy for generating more realistic images. Experiments on two challenging datasets demonstrate the state-of-the-art performance of the proposed framework in the problem of interest.

Wei-Cheng Chang, Chun-Liang Li, Yiming Yang, Barnabas Poczos: Data-driven Random Fourier Features using Stein Effect

Abstract: Large-scale kernel approximation is an important problem in machine learning research. Approaches using random Fourier features have become increasingly popular, where kernel approximation is treated as empirical mean estimation via Monte Carlo (MC) or Quasi-Monte Carlo (QMC) integration. A limitation of the current approaches is that all the features receive an equal weight summing to 1. In this paper, we propose a novel shrinkage estimator from “Stein effect”, which provides a data-driven weighting strategy for random features and enjoys theoretical justifications in terms of lowering the empirical risk. We further present an efficient randomized algorithm for large-scale applications of the proposed method. Our empirical results on six benchmark data sets demonstrate the advantageous performance of this approach over representative baselines in both kernel approximation and supervised learning tasks.

Yanyu Xu, Nianyi Li, Junru Wu, Jingyi Yu, Shenghua Gao: Beyond Universal Saliency: Personalized Saliency Prediction
Abstract: Saliency detection is a long standing problem in computer vision. Tremendous efforts have been focused on exploring a universal saliency model across users despite their differences in gender, race, age, etc. Yet recent psychology studies suggest that saliency is highly specific than universal: individuals exhibit heterogeneous gaze patterns when viewing an identical scene containing multiple salient objects.

In this paper, we first show that such heterogeneity is common and critical for reliable saliency prediction. Our study also produces the first database of personalized saliency maps (PSMs). We model PSM based on universal saliency map (USM) shared by different participants and adopt a multi-task CNN framework to estimate the discrepancy between PSM and USM. Comprehensive experiments demonstrate that our new PSM model and prediction scheme are effective and reliable.

Distinguished Reviewers

The Best reviewers as assessed by peer members of the program committee are listed below.

Senior Program Committee Members
Ingrid Zukerman (Monash University)
Ning Chen (Nanyang Technological University)
Roman Bartak (KTIIML)
Philippe Laborie (IBM)
Gerhard Lakemeyer (Informatik 5 - RWTH-Aachen)
Carlos Linares Lopez (UC3M)
Eva Onaindia (UPV)
Michael Winikoff (Universiy of Otago)
Chang Xu (Ohio University)
Pietro Baroni (UNIBS)

Program Committee Members
Carlos Mencia (University of Oviedo)
Brian Milch (Google Inc.)
Kenneth Heafield (University of Edinburgh)
Stefan Borgwardt (Technische Universitat Dresden)
Ismail Ilkan Ceylan (Technische Universitat Dresden)
Leslie Kaelbling (MIT)
Markus Krötzsch (Technische Universitat Dresden)
Domenico Lembo (Sapienza Università di Roma)
Patricia Riddle (University of Auckland)
Bruno Martins (University of Lisbon)
IJCAI-17 Organisation

Current Trustees
Prof. Michael Wooldridge (University of Oxford, UK)
Prof. Francesca Rossi (University of Padova, Italy)
Prof. Qiang Yang (Hong Kong University of Science and Technology, Hong Kong)
Prof. Gerhard Brewka (Leipzig University, Germany)
Prof. Subbarao Kambhampati (Arizona State University, USA)
Prof. Fahiem Bacchus (University of Toronto, Canada)
Prof. Carles Sierra (IIIA-CSIC, Catalonia, Spain)
Prof. Jeffrey Rosenschein (The Hebrew University of Jerusalem, Israel)
Prof. Jérôme Lang (University Paris Dauphine, France)
Prof. Thomas Eiter (Technische Universität Wien, Austria)
Prof. Sarit Kraus (University of Maryland, USA)

Trustees elect
Marie desJardins (University of Maryland, USA)
Christian Bessiere (Université Montpellier 2, France)

IJCAI secretariat
Prof. Bernhard Nebel (Albert-Ludwigs-Universitaet Freiburg, Germany)
Ms. Vesna Sabljakovic-Fritz (Vienna University of Technology, Austria)

Local arrangements chairs 2017
Prof. Chengqi Zhang (University of Technology, Australia)
Prof. Toby Walsh (NICTA, Australia)
Prof. Andy Song (RMIT University, Australia)

Local arrangements chair 2018
Prof. Fredrik Heintz (Linköping University, Sweden)

Former trustees serving on the executive committee
Prof. Craig Knoblock (University of Southern California, USA)
Prof. Hiroaki Kitano (Sony Computer Science Laboratories, Inc., Japan)
Prof. Ramon López de Mántaras (IIIA-CSIC, Spain)
Prof. Fausto Giunchiglia (University of Trento, Italy)
Prof. Anthony G. Cohn (University of Leeds, UK)
Prof. Hector Levesque (University of Toronto, Canada)
Prof. Luigia Carlucci Aiello (Universita’ di Roma La Sapienza, Italya)
Dr. Michael P. Georgeff (Georgeff International Inc, Australia)
Dr. C. Raymond Perrault (SRI International, Artificial Intelligence Center, USA)
Prof. Wolfgang Wahlster (German Research Center for AI (DFKI), Germany)
Prof. Barbara J. Grosz (Harvard University, USA)
Prof. Wolfgang Bibel (Darmstadt University of Technology, Germany)
Prof. Alan Bundy (University of Edinburgh, UK)
Prof. Alan Mackworth (University of British Columbia, Canada)
Dr. Patrick J. Hayes (IHMCI-UWE, USA)
Prof. D. Raj Reddy (Carnegie Mellon University, USA)
Prof. Erik Sandewall (Linköping University, Sweden)

Other former Trustees
Prof. Sebastian Thrun (Stanford University, USA)
Prof. Toby Walsh (NICTA, Australia)
Prof. Manuela M. Veloso (Carnegie Mellon University, USA)
Prof. Leslie Pack Kaelbling (Massachusetts Institute of Technology, USA)
Prof. Georg Gottlob (University of Technology Vienna, Austria)
Prof. Bernhard Nebel (Albert-Ludwigs-Universitaet, Germany)
Prof. Thomas Dean (Brown University, USA)
Prof. Martha E. Pollack (University of Pittsburgh, USA)
Prof. Chris S. Mellish (University of Edinburgh, UK)
Prof. Ruzena Bajcsy (University of Pennsylvania, USA)
Prof. John Mylopoulos (University of Toronto, Canada)
Prof. John McDermott (Carnegie-Mellon University, USA)
Prof. Aravind Joshi (University of Pennsylvania, USA)
Prof. Alan Bundy (University of Edinburgh, UK)
Prof. Roger Schank (Yale University, USA)
Prof. Bruce Buchanan (Stanford University, USA)
Prof. Raj Reddy (Carnegie-Mellon University, USA)
Prof. Patrick Winston (Artificial Intelligence Laboratory, USA)
Prof. Saul Amarel (Rutgers University, USA)
Prof. Woodrow W. Bledsoe (University of Texas at Austin, USA)
Prof. Max B. Clowes (University of Sussex, UK)
Prof. David C. Cooper (Swansea University, UK)
Prof. Alistair D.C. Holden (University of Washington, USA)
Prof. Ray Reiter (University of Toronto, Canada)
Dr. N. S. Sridharan (FMC Corporation, Central Engineering Laboratories, USA)
Dr. Donald E. Walker (Bellcore, Morristown, USA)  
Prof. Carl Hewitt (Artificial Intelligence Laboratory, USA)  
Dr. Nils Nilsson (SRI International, USA)
Past IJCAI Conferences

This volume contains the proceedings of the twenty-sixth IJCAI conference. The locations and times of all 26 IJCAI conferences are as follows:

26 IJCAI-17: Melbourne, Australia (August 19-25)
25 IJCAI-16: New York, USA (July 9-15)
24 IJCAI-15: Buenos Aires, Argentina (July 25--31)
23 IJCAI-13: Beijing, China (August 3--9)
22 IJCAI-11: Barcelona, Catalonia, Spain (July 16--22)
21 IJCAI-09: Pasadena, California, USA (July 11--17)
20 IJCAI-07: Hyderabad, India (January 6--12)
19 IJCAI-05: Edinburgh, Scotland (July 30--August 5)
18 IJCAI-03: Acapulco, Mexico (August 9--15)
17 IJCAI-01: Seattle, Washington, USA (August 4--10)
16 IJCAI-99: Stockholm, Sweden (July 31--August 6)
15 IJCAI-97: Nagoya, Japan (August 23--29)
14 IJCAI-95: Montreal, Canada (August 20--25)
13 IJCAI-93: Chambery, France (August 28--September 3)
12 IJCAI-91: Sydney, Australia (August 24--30)
11 IJCAI-89: Detroit, Michigan, USA (August 20--26)
10 IJCAI-87: Milan, Italy (August 23--29)
  IJCAI-85: Los Angeles, California, USA (August 18--23)
  IJCAI-83: Karlsruhe, Germany (August 8--12)
  IJCAI-81: Vancouver, Canada (August 24--28)
  IJCAI-79: Tokyo, Japan (August 20--23)
  IJCAI-77: Cambridge, MA, USA (August 22--25)
  IJCAI-75: Tbilisi, Georgia, USSR (September 3--8)
  IJCAI-73: Stanford, California, USA (August 20--23)
  IJCAI-71: London, UK (September 1--3)
  IJCAI-69: Washington, D.C., USA (May 7--9)