



## ACM SIGAI Activity Report

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**Sanmay Das** (elected; [ACM SIGAI Vice-Chair](#))  
**Rosemary Paradis** (elected; [ACM SIGAI Secretary/Treasurer](#))  
**John Dickerson** (elected; [ACM SIGAI Labor Market Officer](#))  
**Yolanda Gil** (appointed; [ACM SIGAI Past Chair](#))  
**Katherine Guo** (appointed; [ACM SIGAI Membership and Outreach Officer](#))  
**Benjamin Kuipers** (appointed; [ACM SIGAI Ethics Officer](#))  
**Iolanda Leite** (appointed; [ACM SIGAI Newsletter Editor-in-Chief](#))  
**Hang Ma** (appointed; [ACM SIGAI Information Officer](#))  
**Nicholas Mattei** (appointed; [ACM SIGAI AI and Society Officer](#))  
**Amy McGovern** (appointed; [ACM SIGAI Newsletter Editor-in-Chief](#))  
**Larry Medsker** (appointed; [ACM SIGAI Public Policy Officer](#))  
**Todd Neller** (appointed; [ACM SIGAI Education Activities Officer](#))  
**Marion Neumann** (appointed; [ACM SIGAI Diversity Officer](#))  
**Plamen Petrov** (appointed; [ACM SIGAI Industry Liaison Officer](#))  
**Michael Rovatsos** (appointed; [ACM SIGAI Conference Coordination Officer](#))  
**David Stork** (appointed; [ACM SIGAI Award Officer](#))  
 DOI: [10.1145/3362077.3362079](https://doi.org/10.1145/3362077.3362079)

### Abstract

We are happy to present the annual activity report of the ACM Special Interest Group on AI (ACM SIGAI), covering the period from July 2018 to June 2019.

The scope of ACM SIGAI consists of the study of intelligence and its realization in computer systems (see also its web-site at [sigai.acm.org](http://sigai.acm.org)). This includes areas such as

autonomous agents, cognitive modeling, computer vision, constraint programming, human language technologies, intelligent user interfaces, knowledge discovery, knowledge representation and reasoning, machine learning, planning and search, problem solving and robotics.

Members come from academia, industry and government agencies worldwide. ACM SIGAI recently added two new ACM SIGAI chapters, namely one professional chapter in Laguna Nigel (USA) and one student chapter at the SRM Institute of Science & Technology in Chennai.

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ACM SIGAI also added two new officers this year to be able to serve its membership better, namely Iolanda Leite from the Royal Institute of Technology (Sweden) as second newsletter editor-in-chief and Marion Neumann from Washington University in St. Louis (USA) as diversity officer, thus increasing diversity in the ACM SIGAI leadership committee by increasing both the number of international officers and the number of female officers and also furthering the internationalization of the ACM SIGAI newsletter. Marion will be covering diversity also as part of the ACM SIGAI newsletter. ACM SIGAI started officers meetings at major AI conferences already in 2018 and continued the new practice in 2019 (so far at the AAAI Conference), in addition to all-officers teleconferences and a monthly ACM SIGAI leadership teleconference.

### Meetings

ACM SIGAI decided to participate on a trial basis in ACM's voluntary carbon-offset program for conferences. Introduction of this scheme will give conference participants the option of making voluntary contributions to offset the carbon footprint of their trips to confer-

ences when they register online. ACM SIGAI plans to test this scheme at upcoming editions of the AAAI/ACM AI, Ethics and Society (AIES) and ACM Intelligent User Interfaces (IUI) conferences in cooperation with AAAI and SIGCHI, respectively, and hopes that it will enable the ACM SIGAI and wider ACM membership to contribute to the environmental sustainability of our communities.

ACM SIGAI continues to support AIES, which it co-founded in 2017 to fill a scientific void. As AI is becoming more pervasive in our lives, its impact on society is more significant, raising ethical concerns and challenges regarding issues such as value alignment, safety and security, data handling and bias, regulations, accountability, transparency, privacy and workforce displacement. Only a multi-disciplinary and multi-stakeholder effort can find the best ways to address these concerns, by including experts from various disciplines, such as ethics, philosophy, economics, sociology, psychology, law, history and politics. AIES was co-located with AAAI 2019 in Honolulu and will again be co-located with AAAI 2020 in New York City.

ACM SIGAI sponsored the following conferences in addition to AIES 2019:

- WI 2018
- ASE 2018
- IVA 2018
- HRI 2019
- IUI 2019

and it will sponsor the following conferences coming up in 2019 and 2020:

- IVA 2019
- K-CAP 2019
- ASE 2019
- WI 2019
- ASE 2020
- HRI 2020
- IUI 2020

ACM SIGAI approved the following in-cooperation and sponsorship requests from events covering a wide thematic and geographical range across the international AI community:

- iWOAR 2018
- ICPRAM 2018
- IEA/AIE 2019
- FW 2018
- BIOSTEC 2019
- RecSys 2019
- FW 2019
- ICAART 2019
- AAMAS 2019
- iWOAR 2019
- KMIKS 2019
- ICPRAM 2019
- FDG 2019
- ICAIL 2019
- IC3K 2019
- IJCCI 2019
- IEA/AIE '20
- AAMAS 2020

ACM SIGAI also organizes – jointly with the Association for the Advancement of AI (AAAI) – the annual joint job fair at the AAAI conference, where attendees can find out about job and internship opportunities from representatives from industry, universities and other organizations. The AAAI/ACM SIGAI job fair was held at AAAI 2019 in Honolulu, co-organized by the ACM SIGAI labor market officer. Twenty-six employers formally attended, while a handful of exhibitors who did not formally sign up also took part. Hundreds of CVs and resumes were collected before, during and after the job fair from students, post-doctoral researchers and other job seekers via the job fair web-site; these were shared with interested employers. This year, the organizers also purchased a dedicated domain ([aaaijobfair.com](http://aaaijobfair.com)) to allow present and future firms and participants to view previous iterations of the job fair. The ACM SIGAI labor market officer believes that we can use insights from AI to create an even better functioning job market and works actively toward designing the job market of the future. Toward that end, he has begun to gather requirements with a large number of chairs of top computer science departments in the USA as well as in Israel and Europe and is working to formulate a model that will be translated into a larger job fair (in terms of participating employers as well as applicants) in the near future.

ACM SIGAI also co-sponsors – jointly with AAAI – the annual joint doctoral consortium at the AAAI conference, which provides an opportunity for Ph.D. students to discuss their research interests and career objectives with the other participants and a group of established AI researchers who act as their mentors. The AAAI/ACM SIGAI doctoral consortium was held at AAAI 2019 in Honolulu.

## Awards

ACM SIGAI sponsors the ACM SIGAI Autonomous Agents Research Award, an annual award for excellence in research in the area of autonomous agents. The recipient is invited to give a talk at the International Conference on Autonomous Agents and Multiagent Systems (AAMAS). The 2019 ACM SIGAI Autonomous Agents Research Award was presented at AAMAS 2019 in Montreal to Carles Sierra, the vice-director of the AI Research Institute of the Spanish National Research Council, for seminal contributions to research on negotiation and argumentation, computational trust and reputation and artificial social systems.

ACM SIGAI also sponsors the ACM SIGAI Industry Award for Excellence in AI, a new annual award which is given annually to an individual or team in industry who created a fielded AI application in recent years that demonstrates the power of AI techniques via a combination of the following features: novelty of application area, novelty and technical excellence of the approach, importance of AI techniques for the approach and actual and predicted societal impact of the application. The inaugural ACM SIGAI Industry Award for Excellence in AI will be presented at the International Joint Conference on AI (IJCAI) 2019 in Macau to the Real World Reinforcement Learning Team from Microsoft for the identification and development of cutting-edge research on contextual-bandit learning, the manifest cooperation between research and development efforts, the applicability of the decision support throughout the broad range of Microsoft products and the quality of the final systems.

ACM SIGAI also recently created – jointly with AAAI – the joint AAAI/ACM SIGAI Doctoral Dissertation Award to recognize and encourage superior research and writing by doctoral

candidates in AI. This new annual award will be presented at the AAAI Conference on AI in the form of a certificate and is accompanied by the option to present the dissertation at the AAAI conference as well as to submit a six-page summary to both the AAAI proceedings and the ACM SIGAI newsletter. The nomination deadline for the inaugural AAAI/ACM SIGAI Doctoral Dissertation Award will be announced later this year and is expected to be in late Fall 2019.

## Public Policy Activities

ACM SIGAI promotes the discussion of policies related to AI through posts in the AI Matters blog, helps to identify external groups with common interests in AI public policy, encourages ACM SIGAI members to partner in policy initiatives with these organizations, disseminates public policy ideas to the ACM SIGAI membership through articles in the ACM SIGAI newsletter and ensures that every technologist is educated, trained and empowered to prioritize ethical considerations in the design and development of autonomous and intelligent systems. ACM SIGAI participates in the ACM US Technology Policy Committee (ACM USTPC), formerly USACM, via the ACM SIGAI public policy officer and in a variety of other policy efforts, including those of other societies (such as the IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems). ACM USTPC addresses US public policy issues related to computing and information technology and regularly educates and informs US Congress, the US Administration and the US courts about significant developments in the computing field and how those developments affect public policy. For example, the ACM SIGAI public policy officer joined the comments of ACM USTPC on the draft of the “20-Year Roadmap for AI Research in the US” of the Computing Community Consortium. He also studies how organizations collect and analyze data and whether these practices are consistent with recommendations by the USTPC working group on algorithmic accountability, transparency and bias. He represented ACM SIGAI via his talks “Future of Work, AI Education, and Public Policy” at AAAI 2019 and “Transparency, Accessibility, and Ethics in AI” at Dalhousie University in 2019. He was also the moderator of the

panel “Are We Ready for AI” at the Annual Consumer Assembly of the Consumer Federation of America in 2019.

### Educational Activities

ACM SIGAI held a second ACM SIGAI Student Essay Contest focused on AI ethics (organized by the ACM SIGAI AI and society officer), after the success of the first such competition in 2017. Students could win cash prizes of US\$500 or Skype conversations with senior AI researchers from academia or industry (including the director of Microsoft Research Labs and the director of research at Google) if their essays provided good answers to one or both of the following topic areas (or any other question in this space that they considered important):

- What requirements, if any, should be imposed on AI systems and technology when interacting with humans who may or may not know that they are interacting with a machine? For example, should they be required to disclose their identities? If so, how?
- What requirements, if any, should be imposed on AI systems and technology when making decisions that directly affect humans? For example, should they be required to make transparent decisions? If so, how?

This year, ACM SIGAI received 18 submissions, of which eight were selected for publication and prizes. The winning essays are listed below in alphabetical order by author. ACM SIGAI intends to hold a third ACM SIGAI student Essay Contest later this year.

- Janelle Berscheid and Francois Roewer-Despres – *Beyond Transparency: A Proposed Framework for Accountability in Decision-Making AI Systems*
- Gage Garcia – *AI Education: A Requirement for a Strong Democracy*
- Alexander Hilton – *AI: The Societal Responsibility to Inform, Educate, and Regulate*
- Michelle Seng Ah Lee – *Context-Conscious Fairness in Using Machine Learning to Make Decisions*
- Yat Long Lo, Chung Yu Woo and Ka Lok Ng – *The Necessary Roadblock to Artificial General Intelligence: Corrigibility*
- Grace McFassel – *Embedding Ethics: Design of Fair AI Systems*

- Matthew Sun and Marissa Gerchick – *The Scales of (Algorithmic) Justice: Tradeoffs and Remedies*
- Annie Zhou – *The Intersection of Ethics and AI*

ACM SIGAI supported the “Birds of the Feather” undergraduate research challenge organized by the ACM SIGAI education officer at the Symposium on Educational Advances in AI (EAAI) 2019. Six research and liberal arts institutions participated with seven papers and one poster presentation that passed peer review. ACM SIGAI contributed US\$500 of award funding for the best papers. The ACM SIGAI education officer intends to announce a Gin Rummy undergraduate research challenge at EAAI 2020.

ACM SIGAI also started discussions with the ACM Special Interest Group on Computer Science Education (ACM SIGCSE) on a collaboration for disseminating pointers to resources for AI educators and creating incentives for the production and dissemination of assignments on AI ethics.

### Member Communication

ACM SIGAI communicates with its members via email announcements, the ACM SIGAI newsletter “AI Matters,” the AI Matters blog and webinars:

ACM SIGAI maintains a more than 4,000 email address long mailing list for AI-related announcements to its members and friends.

ACM SIGAI publishes four issues of its newsletter AI Matters per year. The ACM SIGAI newsletter is distributed via the ACM SIGAI mailing list but also openly available on the ACM SIGAI web-site (at [sigai.acm.org/aimatters/](http://sigai.acm.org/aimatters/)). AI Matters features articles of general interest to the AI community and added not only an additional editor-in-chief but also additional column editors in the past year. Recent columns, led by these and other column editors, have included AI Interviews (organized by the ACM SIGAI diversity officer), AI Amusements, AI Education (written or organized by the ACM SIGAI education officer), AI Policy Issues (written by the ACM SIGAI public policy officer) and AI Events (written by the ACM SIGAI conference coordination officer). The editors-in-chief have recently added an AI crossword puzzle

(thanks to Adi Botea from IBM's Ireland Research Laboratory) and are about to add a column on current research trends in AI, written by recent grantees of research funds (such as NSF CAREER or European Research Council awards). AI Matters has also started to publish the winning student essays of the second ACM SIGAI Student Essay Contest.

ACM SIGAI also maintains an AI Matters blog (at [sigai.acm.org/aimatters/blog/](http://sigai.acm.org/aimatters/blog/)) as a forum for important announcements and news. For example, the ACM SIGAI public policy officer posts new information every two weeks in the blog to survey and report on current AI policy issues and raise awareness about the activities of other organizations that share interests with ACM SIGAI.

After a hiatus due to the illness of one of the organizers, ACM SIGAI recently restarted the ACM SIGAI webinars with a webinar on “Advances in Socio-Behavioral Computing” and several more in preparation. The webinars are streamed live but the videos can still be watched on demand at [learning.acm.org/webinar/](http://learning.acm.org/webinar/).

ACM SIGAI is also a founding member of AI Hub (at [aihub.org](http://aihub.org)), a new non-profit sibling to Robohub (at [robohub.org](http://robohub.org)) dedicated to connecting the AI communities of the world by bringing together experts in AI research, startups, business and education from across the globe. Content-area specialists will curate all incoming AI news articles to make sure that reporting is truthful, fair and balanced, and in-house editors will ensure that all content meets the highest editorial standards for language and clarity. AI Hub is expected to come online in Summer or Fall 2019. ACM SIGAI will provide content to AI Hub and, conversely, AI Hub will provide AI news to the ACM SIGAI members.

### Financial Member Support

ACM SIGAI so far had concentrated its financial support on travel scholarships to ACM SIGAI student members to allow them to attend conferences if they are otherwise missing the financial resources to do so. The amounts of the scholarships vary but are generally in the range of US\$1,000 to US\$10,000 per conference, depending on the conference size.

The ACM SIGAI conference coordination officer recently started to test a new open student award travel scheme. Beyond providing a ringfenced allocation to specific conferences, he created a process by which any ACM SIGAI student member who intends to attend an ACM (and, in exceptional cases, even a non-ACM) event can apply for travel support through the ACM SIGAI web-site. In the first few months since the inception of the scheme, students have already been offered financial support of about US\$8,000 in total.

ACM SIGAI also recently created the AI Activities Fund, a new initiative to empower ACM SIGAI members and friends to organize activities with a strong outreach component to either students, researchers or practitioners not working on AI technologies or to the public in general. The purpose of the inaugural call for funding proposals was to help ACM SIGAI members and friends to promote a better understanding of current AI technologies, including their strengths and limitations as well as their promise for the future. Examples of fundable activities included (but were not limited to) AI technology exhibits or exhibitions, holding meetings with panels on AI technology (including on AI ethics) with expert speakers, creating podcasts or short films on AI technologies that are accessible to the public and holding AI programming competitions. ACM SIGAI was looking for evidence that the information presented by the activities would be of high quality, accurate, unbiased (for example, not influenced by company interests) and at the right level for the intended audience. The inaugural call for proposals supported the following initiatives: a workshop on “AI for All using the R Programming Language” organized by the Indian Institute of Technology in Goa, the “Bee Network of AI” organized by the Universidad Mayor in Chile and “Co-Opting AI: Public Conversations about Design, Inequality and Technology” organized by New York University.

### Additional Member Services

ACM SIGAI also supports its members in additional ways. For example, it nominates them for awards or supports their nominations. ACM SIGAI is proud of the fact that many AI researchers in the past year received ACM

honors, such as becoming ACM senior members, distinguished members and fellows as well as receiving other awards. Three AI researchers received the A.M. Turing Award in 2018.

ACM SIGAI also actively supports the Research Highlight Track of the Communications of the ACM (CACM) by nominating publications of recent, significant and exciting AI research results that are of interest to the computer science research community in general to the Research Highlight Track. This way, ACM SIGAI helps to make important AI research results visible to many computer scientists.

Additional ACM SIGAI membership benefits include reduced registration fees at many of the co-sponsored and in-cooperation conferences and access to the proceedings of many of these conferences in the ACM Digital Library.

### **Planning for the Future**

ACM SIGAI held elections for a new chair, vice chair and secretary/treasurer in Spring 2019. Sanmay Das (the current ACM SIGAI vice chair) was elected ACM SIGAI chair, Nicholas Mattei (the current ACM SIGAI AI and society officer) was elected ACM SIGAI vice-chair, and John Dickerson (the current ACM SIGAI labor market officer) was elected ACM SIGAI secretary/treasurer. Sven Koenig (the current ACM SIGAI chair) will transition to his new role as ACM SIGAI past chair. We are looking forward to the new leadership committee shaping the future of ACM SIGAI. In general, ACM SIGAI intends to reach out to more AI groups worldwide that could benefit from ACM support, such as providing financial support, making the proceedings widely accessible in the ACM Digital Library and providing speakers via the ACM Distinguished Speakers program. ACM SIGAI also intends to reach out more to other disciplines that share an interest in AI, for example, in terms of research methodologies or applications.