

Report on the Sixth AAAI Conference on Human Computation and Crowdsourcing (HCOMP 2018)

Yiling Chen, Gabriella Kazai

■ *The Association for the Advancement of Artificial Intelligence's Sixth AAAI Conference on Human Computation and Crowdsourcing was held on the campus of the University of Zurich in Zürich, Switzerland, July 5–8, 2018. This report, based on the preface to the HCOMP-18 proceedings and program, summarizes the event.*

AAI's Sixth AAAI Conference on Human Computation and Crowdsourcing was held on the campus of the University of Zurich in Zürich, Switzerland. The event opened with workshops on July 5, with the conference itself beginning on July 6 and ending on July 8.

This year's conference broke a number of traditions set in previous years. After eight years of being hosted in North America, HCOMP 2018 returned to Europe, where the very first HCOMP workshop had taken place in 2009. The conference dates also moved from the autumn to the summer and, this year, HCOMP 2018 colocated with Collective Intelli-



Proceedings, The Sixth AAI Conference on Human Computation and Crowdsourcing

Zürich, Switzerland
July 5–8, 2018

Yiling Chen and Gabriella Kazai,
Conference Cochairs

gence, CI 2018, which was also celebrating its first foray outside the US. By bringing together these two interdisciplinary communities, we fostered new connections among collective intelligence, crowdsourcing, and human computation scholars and practitioners, across diverse fields including human-computer interaction (HCI), artificial intelligence, economics, business, and design.

HCOMP was started by researchers from diverse fields who wanted a high-quality scholarly venue for the review and presentation of the highest quality work on the principles, studies, and applications of human computation and crowdsourcing.

This year's conference builds on the success of five previous AAAI HCOMP conferences (and four HCOMP workshops before that) to promote the most rigorous and exciting scholarship in this fast-emerging, multidisciplinary area. The HCOMP conference is designed to be a venue for exchanging ideas and developments on principles, experiments, and implementations of systems that rely on programmatic access to human intellect to perform some aspect of computation, or where human perception, knowledge, reasoning, or coordinated activity contributes to the operation of larger systems and applications. While artificial intelligence and human-computer interaction represent traditional mainstays of the conference, HCOMP believes in inviting, fostering, and promoting broad, interdisciplinary research. This field is particularly unique in the diversity of disciplines it draws upon, and contributes to, ranging from human-centered qualitative studies and HCI design, to computer science and artificial intelligence, from economics and the social sciences, all the way to cultural heritage, digital humanities, ethics, and policy. The HCOMP conference is aimed at promoting the exchange of advances in human computation and crowdsourcing among not only researchers, but also engineers and practitioners, to encourage dialogue across a spectrum of disciplines and communities of practice.

HCOMP 2018 had an in-person program committee meeting at two locations, in Cambridge UK and Cambridge US, connected at all times via a live audio-video link, where PC members discussed each and every paper. This interaction was considered especially helpful, given the interdisciplinary nature of the conference. While peer review is an inherently challenging process and never perfect, we have done our utmost to be transparent and fair to authors, to be clear to reviewers in our expectations, and to ensure consistency among reviewers. A total of 22 out of the 75 (29 percent) papers were accepted for publication and oral presentation at the conference, forming a high-quality technical program.

Two papers and one demonstration were singled out for awards at the conference. The Best Paper award went to Alessandro Checco, Jo Bates, and Gianluca Demartini, for their paper "All That Glitters

is Gold — An Attack Scheme on Gold Questions in Crowdsourcing." Besmira Nushi, Ece Kamar, and Eric Horvitz were also singled out with an honorable mention for their paper "Towards Accountable AI: Hybrid Human-Machine Analyses for Characterizing System Failure." Finally, Vikram Mohanty, David Thames, and Kurt Luther's presentation, "Are 1,000 Features Worth A Picture? Combining Crowdsourcing and Face Recognition to Identify Civil War Soldiers," was given the Best Poster / Demo Presentation award.

As the discipline is fast evolving, it is important also to provide a venue to encourage the exchange of promising ideas and ongoing work. For this, we invited submissions to a Works-in-Progress (WIP) and Demonstrations track, co-organized by Alessandro Bozzon (Delft University of Technology) and Matteo Venanzi (Microsoft), with its own program committee for the track. Fifteen out of 31 submissions (48 percent) were accepted to this track. The collection of WIP papers and demonstrations stimulated thinking and discussion at the conference and beyond, and will help to inform future research directions.

The HCOMP 2018 and CI 2018 keynote speakers, Patrick Meier (WeRobotics) and Lucy Fortson (University of Minnesota), invited attendees to delve into the challenges and opportunities for humans and machines to collaborate in solving big data issues in the fields of humanitarian response and citizen science, respectively.

In his talk "Digital Humanitarians: How You Can Make a Difference During the Next Disaster," Meier noted that the overflow of information generated during disasters can be as paralyzing to humanitarian response as a lack of information. This flash flood of information — often called *big crisis data* — comes in the form of social and mainstream media as well as aerial imagery and satellite imagery. Making sense of this deluge of data is proving to be an impossible challenge for humanitarian organizations. This is precisely why they're turning to digital humanitarians. Digital humanitarians use crowdsourcing and artificial intelligence to process this big crisis data and extract insights.

Meier highlighted real-world examples of digital humanitarians in action across the globe, and spoke of the biggest challenges they face in crafting and using human and machine computing solutions to accelerate humanitarian efforts. He examined the challenge of analyzing aerial imagery captured by civilian drones during disasters.

Lucy Fortson presented "Optimizing the Human-Machine Partnership with Zooniverse." She noted that citizen science — the involvement of hundreds of thousands of people in the research process — can provide a radical solution to the challenge of dealing with the greatly increased size of modern datasets. Zooniverse.org, she said, is the most successful collection of online citizen science projects, enabling



HCOMP 2018 was held at the University of Zurich.

over 1.7 million online volunteers to contribute to over 120 research projects spanning disciplines from astronomy to zoology. She briefly described the Zooniverse platform and some of the results to date from the Zooniverse collection of online projects in the context of new approaches to combining machine learning with human classifications. She then provided an overview of recent data science experiments with the ultimate goal of producing a system that most efficiently balances the human and machine classifications, and ended with a short description of future developments of the Zooniverse platform.

The HCOMP conference was preceded by five workshops and a networking event, held on July 5. The workshop events are summarized in a separate report. The Research Project Networking Event, organized by Elena Simperl (University of Southampton) and Lora Aroyo (Vrije Universiteit Amsterdam), offered a unique opportunity to present research projects and network across community boundaries, bringing together participants from the worldwide HCOMP community.

The Doctoral Consortium, organized by Carsten Eickhoff (Brown University) and Walter Lasecki (University of Michigan), was held on July 8. It provided

the competitively accepted doctoral students with a unique opportunity to meet each other and experienced researchers in the field. Students were mentored by a group of faculty members who are leaders in the diverse specialties that make up the HCOMP field. The Doctoral Consortium was grateful to sponsorship from the National Science Foundation and the *Artificial Intelligence Journal*, as well as a generously sponsored social dinner by Bloomberg.

We are excited about the continuing growth of research and practice in the areas of human computation and crowdsourcing, and thrilled to have organized the sixth annual HCOMP conference in Zürich, Switzerland — where the European location aided in strengthening the links between human computation communities across the globe. It is hoped that the HCOMP conference will continue to play an important role in the development of research and the exchange of ideas among researchers, engineers, and practitioners across a spectrum of disciplines in our growing community.

Yiling Chen is a professor of computer science at Harvard University.

Gabriella Kazai is head of data science at Lumi, Semion Ltd.