Conference Report:
The 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2019)
Chicago, Illinois, USA
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1 Introduction

This report describes the development and finalization of the 27th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL 2019), held in Chicago, Illinois, USA, November 5-8, 2019. The attendance for the 2019 conference was 397, the second highest in the history of ACM SIGSPATIAL.

Historically, what is now the ACM SIGSPATIAL conference started as a series of workshops and symposia in 1993. Its aim was to promote the interdisciplinary discussions among researchers, developers, users, and practitioners and fostering research in all aspects of Geographic Information Systems – hence the original workshop acronym ACM GIS. The focus was on novel systems based on geospatial data and knowledge. It continued its mission of providing a forum for original research results, addressing conceptual, design, and implementation aspects of geospatial data ranging from applications, user interfaces and visualization, to data storage, query processing, indexing and data mining. The conference is now the premier annual event of the ACM Special Interest Group on Spatial Information (ACM SIGSPATIAL).

2 Program

The technical program of the conference was decided in a two-stage process:

(1) Each submitted paper was first reviewed by at least three members of a carefully chosen program committee (PC) consisting of experts in the relevant fields. Our PC had a total of 120 invited members from academia and industry, plus an additional 21 members who were designated as the Senior PC. The assignment of papers to reviewers followed a bidding stage, during which PC members were allowed to express ranked preferences regarding their willingness to review a particular submission. In addition to three reviewers from the PC, each paper was also assigned a designated Senior PC member who studied the reviews, discussed the merits of the submission with the reviewers, wrote a metareview, and formulated an accept/reject recommendation.

(2) Similar to 2018, we implemented a rebuttal phase where the authors received preliminary versions of the reviews and the meta-review, and were offered the opportunity to address the concerns raised therein by submitting a response. The reviews, meta-reviews, and accept/reject recommendations were then finalized, taking into account the author responses. The selection of papers to include in the conference program was ultimately made by the PC Chairs. Certain papers that were not accepted for the conference, with the permission of the authors, were forwarded to the conference's Workshop Chairs to be considered for inclusion in relevant workshops co-located with SIGSPATIAL.

Papers were submitted and accepted in different categories. We received a total of 161 research submissions out of which 34 were accepted as full 10 page papers. Further, 6 industrial experience and systems papers were accepted. The remaining papers in the proceedings correspond to demos and posters, which had 4 pages, and two 4 page vision papers. The latter were once again sponsored by the Computing Community Consortium (CCC) encouraging the submission of papers describing visionary ideas. Our reviewers put in a significant amount of effort in reviewing the papers and our hope is that the reviews were beneficial even to those authors whose papers were not accepted.

A paper to receive the best paper award was selected from all the accepted full papers in the research and industrial experience and systems categories. Similar to 2018, this paper was selected before the conference and the award presented at the conference. For the best paper award, the top six papers with highest average review scores were selected as candidates. A best paper award committee consisting of three members including two of the PC Co-Chairs and one senior PC member reviewed the candidate papers and reviews and selected the best paper after discussions.

This year we held once again the SIGSPATIAL Cup programming contest, which focused on competitive spatio-temporal searching in which mobile agents search for stationary resources on a road network. The competition received 11 submissions and the teams totaled 35 members submitting formal entries. Four entries were selected as winners, and were additionally qualified for an invited paper, an oral presentation and award prizes during the banquet. HERE, IBM, Lyft and Microsoft provided sponsorship for the SIGSPATIAL Cup and the awards for the winners. TU/e and HERE developed the COMSET open-source simulator which was used as the standard development and evaluation tool for the contest.

The conference again held a Student Research Competition (SRC) that aimed at providing a forum for undergraduate and graduate students to share their research results and exchange ideas with other students, judges, and conference attendees. This year, five papers authored by graduate students and one paper authored by an undergraduate student were selected for presentation during the conference and were further assessed for advancement to the next round of the competition, the ACM Grand Finals.

ACM SIGSPATIAL 2019 had two invited talks: Vinay Shet (Lyft) whose keynote addressed *Route Planning in Transportation from Research to Practice*, and David S. Ebert (Purdue University) with a keynote presentation *Visual Spatial Analytics and Trusted Information for Effective Decision Making*.

The conference was preceded by 15 associated workshops managed by the Workshop Co-Chairs John Krum (Microsoft, USA) and Mohamed Sarwat (Arizona State University, USA), in addition to the many respective individual workshops organizers.

3   Acknowledgements and Recognitions

Recreating and organizing such a vibrant forum from year to year takes tremendous efforts and collaboration among many dedicated individuals. We are especially grateful to our PC, Senior PC and external reviewers, who generously and carefully reviewed the submissions and produced valuable feedback for both us and the authors. To produce the proceedings, we had the pleasure to work closely with two individuals who took a lot of the burden – and did a great job – Proceedings Co-Chairs Gabriel Ghinita (University of Massachusetts, USA) and Raymond Wong (Hong Kong University of Science and Technology, Hong Kong). We thank Chrysovalantis Anastasiou (University of Southern California, USA) and Xu Teng (Iowa State University, USA) who were extremely responsive as our Webmasters. We are also very thankful to the Publicity Co-Chairs: Zhe Jiang (University of Alabama, USA), Amr Magdy (University of California, Riverside, USA), and Andreas Züfle (George Mason University, USA). Furthermore we thank Martin Werner (Leibniz-University Hanover, Germany) and Bin Yang (Aalborg University, Denmark) who served as Poster Co-Chairs, and extend our special thanks to Bo Xu (HERE, USA), Yuanyuan Pao (Lyft, USA), and Udayan Khurana (IBM, USA) who organized the SIGSPATIAL Cup programming contest this year.

Many other fine individuals were involved and did a great job for the technical organization of the event and were in charge of many related activities. We thank Matthias Schubert (Ludwig Maximilian University, Germany) and Alvin Chin (BMW North America, USA) who served as Treasurer Co-Chairs, along with our special thanks to Kyriakos Mouratidis (Singapore Management University) and Theodoros Chondrogiannis (University Konstanz, Germany) who were in charge of organizing the SRC (Student Research Competition). We are indebted to Jing (David) Dai (Google, USA) and Kyoungsoon Kim (National Institute of Advanced Industrial Science and Technology, Japan) who served as Registrations Co-Chairs. Local Arrangements Co-Chairs – James Biagioni (CARMERA, USA), Hien To (Amazon, USA), and Matei Stroila (HERE, USA) – are the ones to whom we are all indebted for the diligence and hard work that they put in to ensure that everything ran smoothly at the venue.

We are also thankful to the ACM SIGSPATIAL Executive Committee for their expert, sustaining guidance of the conference: Cyrus Shahabi (Chair, University of Southern California, USA), Goce Trajcevski (Vice-Chair, Iowa State University, USA), Egemen Tanin (Secretary, University of Melbourne, Australia), and John Krumm (Treasurer, Microsoft Research, USA).

A distinguished token of gratitude is due to Hanan Samet, Cyrus Shahabi, and Kentaro Toyama for bringing this conference to the forefront in 2007 and starting ACM SIGSPATIAL.

Very special thanks and recognitions are in order for our very generous corporate sponsors – Microsoft, Apple, HERE, and DiDi (Platinum Sponsors), Esri (Silver Sponsors), Oracle, Lyft, and Google (Bronze Sponsor), many of whom have supported this conference for multiple years. It is in order to recognize the appreciation of the work of Chengyang Zhang (Amazon, USA) and Feng Lu (National Remote Sensing Center of China, China) who were instrumental as Sponsors Co-Chairs in getting these companies to support the conference. We are also grateful for the publishing sponsorship by Springer Publishers.

A very distinct token of gratitude goes to the US National Science Foundation (NSF) for its institutional sponsorship enabling travel-grants for students. Additionally, we appreciate HERE, IBM, Lyft, and Microsoft who provided financial sponsorship for the SIGSPATIAL Cup and the awards for the winners. Last, but not the least, the two accepted vision papers received an award from the Computing Research Associations Computing Community Consortium (CCC).

Every year, the conference highlights the most important advances in GIS and provides a forum for lively exchange of ideas among leading researchers and practitioners in the field. In conclusion, we would like to express once again our gratitude to all the authors who submitted papers, the members of the PC and the senior PC, the conference officers, and all the other individuals who contributed their expertise and time to make the conference possible.