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Advances in Knowledge Discovery and Data Mining


24th Pacific-Asia Conference, PAKDD 2020
Singapore, May 11–14, 2020
Proceedings, Part II


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PC Chairs' Preface

It is our great pleasure to introduce the proceedings of the 24th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2020). The conference provides an international forum for researchers and industry practitioners to share their new ideas, original research results, and practical development experiences from all KDD-related areas, including data mining, data warehousing, machine learning, artificial intelligence, databases, statistics, knowledge engineering, visualization, decision-making systems, and the emerging applications.

We received 628 submissions to PAKDD 2020 from a variety of countries and regions all over the world, noticeably with submissions from China, Australia, USA, India, Germany, France, Japan, Singapore, Taiwan, South Korea, Bangladesh, New Zealand, and Indonesia. The large number of submissions and high diversity of submission demographics are testaments to the significant influence and reputation of PAKDD. A rigorous double-blind reviewing procedure was ensured via the joint efforts of the entire Program Committee consisting of 55 Senior Program Committee (SPC) members and 344 Program Committee (PC) members.

The PC co-chairs performed an initial screening of all the submissions, among which 60 submissions were desk rejected due to the violation of submission guidelines. For submissions entering the double-blind review process, each one received at least three quality reviews from PC members (with 79% of them receiving four or more reviews). Furthermore, each valid submission received one meta-review from the assigned SPC member who also led the discussion with the PC members. The PC co-chairs then considered the recommendations and meta-reviews from SPC members, and looked into each submission as well as its reviews and PC discussions to make the final decision. As a result, 135 out of 628 submissions were accepted, yielding an acceptance rate of 21.5%. All the accepted papers are presented in a total of 12 technical sessions. Due to the outbreak of COVID-19, PAKDD 2020 was conducted in an online environment. Each paper was allocated 13 minutes for pre-recorded video presentation and 4 minutes for live Q/A. The conference program also featured four keynote speeches from distinguished data mining researchers, one most influential paper talk, two invited industrial talks, five cutting-edge workshops, two comprehensive tutorials, and one dedicated data mining competition session. We wish to sincerely thank all SPC members, PC members, and external reviewers for their invaluable efforts in ensuring a timely, fair, and highly effective paper review and selection procedure. We hope that readers of the proceedings will find that the PAKDD 2020 technical program was both interesting and rewarding.

March 2020

Hady W. Lauw
Raymond Chi-Wing Wong
Alexandros Ntoulas

General Chairs' Preface

On behalf of the Organizing Committee, it is our great pleasure to welcome you to the 24th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2020). Since its first edition in 1997, PAKDD has been well established as one of the leading international conferences in data mining and knowledge discovery. Held during May 11–14, 2020, PAKDD 2020 returned to Singapore for the second time, after a 14-year hiatus. Due to the unexpected COVID-19 epidemic, we made all the conference sessions accessible online to participants around the world, which was unprecedented in the PAKDD history.

Our gratitude goes first and foremost to the authors who submitted their work to the PAKDD 2020 main conference, workshops, and data mining contest. We thank them for the great efforts in preparing high-quality online presentations videos. It is also our honor that four eminent keynote speakers graced the conference: Professor Inderjit S. Dhillon from University of Texas at Austin, Professor Samuel Kaski from Aalto University, Professor Jure Leskovec from Stanford University, and Professor Bing Liu from University of Illinois at Chicago. Given the importance of data science not just to academia but also to industry, we were pleased to have two distinguished industry speakers: Dr. Usama Fayyad, Chairman & CEO of Open Insights and Co-Founder & Advisory CTO of OODA Health, Inc., as well as Dr. Ankur M. Teredesai, Founder & CTO of KenSci and Professor at the University of Washington Tacoma. The conference program was further enriched with two high-quality tutorials, five workshops on cutting-edge topics, and one data mining contest on prediction of disk failures.

We express our sincere gratitude to the contributions of the SPC members, PC members, and external reviewers, led by the PC co-chairs, Hady W. Lauw, Raymond Chi-Wing Wong, and Alexandros Ntoulas. We are also thankful to the other Organizing Committee members: industry co-chairs, Ying Li and Graham Williams; workshop co-chairs, Kenny Q. Zhu and Wei Lu; tutorial co-chairs, Huiping Cao and Gao Cong; publicity co-chairs, Evangelos E. Papalexakis and Aixun Sun; sponsorship co-chairs, Feida Zhu and Giuseppe Manai; competitions chair, Mengling Feng; proceedings chair, Sinno J. Pan; and registration/local arrangement co-chairs, Aloysius Lim and Bing-Tian Dai.

We appreciate the hosting organization Singapore Management University and our sponsor Singapore Tourism Board for their institutional and financial support of PAKDD 2020. We also appreciate Alibaba for sponsoring the data mining contest. We feel indebted to the PAKDD Steering Committee for its continuing guidance and sponsorship of the paper and student travel awards.

Finally, our sincere thanks go to all the participants and volunteers – there would be no conference without you. We hope all of you enjoyed PAKDD 2020.

March 2020

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