Preface: The 2019 ACM SIGKDD Workshop on Causal Discovery

Thuc Duy Le  Thuc.Le@unisa.edu.au
School of Information Technology and Mathematical Sciences
University of South Australia
Mawson Lakes, SA 5095, Australia

Jiuyong Li  Jiuyong.Li@unisa.edu.au
School of Information Technology and Mathematical Sciences
University of South Australia
Mawson Lakes, SA 5095, Australia

Kun Zhang  Kunz1@cmu.edu
Department of Philosophy
Carnegie Mellon University
Pittsburgh, PA 15213, USA

Emre Kıcıman  Emrek@microsoft.com
Microsoft Research
Redmond, WA, USA

Peng Cui  cuip@tsinghua.edu.cn
Tsinghua University
China

Aapo Hyvärinen  A.hyvarinen@ucl.ac.uk
University of Helsinki
Finland

Editor: Thuc Duy Le, Jiuyong Li, Kun Zhang, Emre Kıcıman, Peng Cui, and Aapo Hyvärinen

Discovering causal relationships is the ultimate goal of many scientific explorations. However, it is not feasible to conduct randomized controlled trials in most cases. Discovering causal relationships in large databases of observational data is therefore very important, but it is also a challenging problem. There has been an increasing interest in discovering causal relationships based on observational data, and in the past few decades, significant contributions have been made to this field by computer scientists.

Inspired by such achievements and following the success of the ACM SIGKDD workshops on Causal Discovery in the last three years (CD 2016 - CD 2018), CD2019 is aimed at bringing together researchers and practitioners interested in causal discovery from various disciplines, to communicate their new ideas, algorithms, and novel applications of causal discovery methods. This workshop is held in conjunction with the 2019 International Conference on Knowledge Discovery and Data Mining (KDD2019), Alaska, 4-8 August, 2019, which provides the workshop the opportunity to attract contributions from the data mining community especially.
The workshop has received 14 high-quality submissions. After a careful review process with each paper being reviewed by 3-4 experts, 7 papers were selected for publishing in the Proceedings of Machine Learning Research, Volume 104, 2019 and presented at CD 2019. These papers have a good coverage on different types of causal models for observational data, including longitudinal data and datasets with mixed data types. The workshop features a keynote speech by Dr Ronny Kohavi from Microsoft Research, who is pioneer researcher for online controlled experiments.

We would like to thank all the people who have contributed to the workshop. In particular, we thank all authors who have submitted their papers to CD 2019 and the PC members for their timely and high-quality reviews – it would not be possible for the workshop to succeed without your involvement. We are grateful to KDD 2019 for their support, especially to the workshop chairs Dr Anuj Karpatne and Dr Jing Gao for their help. We also thank the Series Editors at Proceedings of Machine Learning Research, Professor Neil Lawrence and Dr Mark Reid for their help in publishing the workshop proceedings.

Finally, we would like to thank you, the participants of the workshop and the readers of the proceedings. We hope you enjoy the workshop and the papers.

Workshop Organisation

Co-Chairs
Thuc Duy Le, University of South Australia
Jiuyong Li, University of South Australia
Kun Zhang, Carnegie Mellon University
Emre Kıcıman, Microsoft Research
Peng Cui, Tsinghua University
Aapo Hyvärinen, University of Helsinki

Program Committee
Ruichu Cai, Guangdong University of Technology, China
Laiwan Chan, The Chinese University of Hong Kong, Hong Kong, China
Zhitang Chen, Noah’s Ark Lab, Huawei Technologies Co., LTD
Mingming Gong, University of Technology Sydney, Australia
Emre Kıcıman, Microsoft Research, USA
Thuc Duy Le, University of South Australia, Australia
Jiuyong Li, University of South Australia, Australia
Lin Liu, University of South Australia, Australia
Antti Hyttinen, University of Helsinki
Samantha Kleinberg, Stevens Institute of Technology
Tsai-Ching Lu, HRL Laboratories, USA
Daniel Malinsky, Carnegie Mellon University
Wolfgang Mayer, University of South Australia, Australia
Vu Viet Hoang Pham, University of South Australia, Australia
Amit Sharma, Microsoft Research, India
Shohei Shimizu, The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan
Ricardo Silva, University College London
Eric Strobl, University of Pittsburgh
Sofia Triantafillou, University of Crete, Greece
Takashi Washio, The Institute of Scientific and Industrial Research, Osaka University, Japan
Kui Yu, Hefei University of Technology
Kun Zhang, Carnegie Mellon University, USA
Weijia Zhang, University of South Australia, Australia