Preface: The 2019 ACM SIGKDD Workshop on Causal Discovery

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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

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