Causality: Fundamental Limits and Applications

Call for papers
IEEE Journal on Selected Areas in Information Theory (JSAIT)

Causal determinism, is deeply ingrained with our ability to understand the physical sciences and their explanatory ambitions. Besides understanding phenomena, identifying causal networks is important for effective policy design in nearly any avenue of interest, be it epidemiology, financial regulation,management of climate, etc. In recent years, many approaches to causal discovery have been proposed predominantly for two settings: a) for independent and identically distributed data and b) time series data. Furthermore, causality- inspired machine learning which harnesses ideas from causality to improve areas such as transfer learning, reinforcement learning, imitation learning, etc is attracting more and more interest in the research community. Yet fundamental problems in causal discovery such as how to deal with latent confounders, improve sample and computational complexity, and robustness remain open for the most part. This special issue aims at reporting progress in fundamental theoretical and algorithmic limits of causal discovery, impact of causal discovery on other machine learning tasks, and its applications in sciences and engineering.

Prospective authors are invited to submit original manuscripts on topics including but not limited to:

- Fundamental limits of causal discovery and effect identification
- Efficient algorithms for causal discovery
- Real-world applications of causal discovery
- Causally-enriched reinforcement learning, active learning, transfer learning, or imitation learning
- Causally inspired representation learning

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Submission Guidelines
Prospective authors must follow the *IEEE Journal on Selected Areas in Information Theory* guidelines regarding the manuscript and its format. For details and templates, please refer to the *IEEE Journal on Selected Areas in Information Theory* Author Information webpage. All papers should be submitted through Scholar One according to the following schedule:

Key Dates:

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