

# **Causal inference with graphical models : A brief review**

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The central aim of many studies in the social and medical sciences is the elucidation of cause-effect relationships among variables or events. While, the appropriate methodology for extracting such causal relationships from data is still an open question (and fiercely debated), graphical models provide a simple and convenient way of communicating causal claims. In this talk, I review the basics of causal inference in graphical model and demonstrate, using simple examples, how non-trivial causal phenomena, paradoxes and controversies in causal analysis can be understood, exemplified and analyzed using a few algebraic steps. The causal diagram represents the investigator's understanding of the major causal influences among measurable quantities in the domain and practical inference problems can be solved using the do-calculus developed by Judea Pearl in 1995.