UTHealth
The University of Texas Health Science Center at Houston
School of Biomedical Informatics

DSICCR Tuesday Seminar Series

February 28th, 12pm-1pm, Webcast Click Here

Scalable Causal Structure Learning and Application to Identifying Clinical Pathways from Electronic Health Records

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Causal structure learning refers to a process of identifying causal structures from observational data, and it can have multiple applications in biomedicine and health care. This talk provides a review and benchmark on scalable causal structure learning models with application to identifying clinical pathways to Alzheimer's disease. Various traditional approaches have been studied to tackle this problem, the most important among these being the Peter Spirtes and Clark Glymour algorithms. This was followed by analyzing the literature on score-based methods, which are computationally faster. Due to the continuous constraint on acyclicity, new deep learning approaches offer scalability. By comparing these methods with benchmark experiments, we highlight the advantages and disadvantages of these methods. We also discuss its application to identify clinical pathways to predispose older adults to Alzheimer's. We mainly focus on racial differences in the pathways between African Americans and Caucasian counterparts.

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