INDUSTRIAL & SYSTEMS ENGINEERING
UNIVERSITY of WASHINGTON

Rule-based Decision-Making Systems for Heterogeneous Longitudinal Data

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Abstract

Recent advances in sensing technology have greatly expanded our capacities to collect data from a diverse pool of patients in unprecedented spatial-temporal resolutions. The increasing sizes of modern datasets makes the development of sparse models imperative. There has also been a recent push towards interpretable models that can not only provide accurate predictions but also explain why the prediction has been in complex applications such as healthcare to enhance accountability. A faithful understanding of the uncertainty in the predictions is also becoming critical as decision making can be dangerous and expensive in applications especially as more and more systems are getting automated in this age of data. Further, personalized decision models that can recognize heterogeneity between observations and subgroups are important in medical applications. In this talk, I will introduce novel machine learning models that can address these new and exciting challenges.

Bio

Ameer Hamza Shakur is a Ph.D. candidate in the Industrial and Systems Engineering Department at the University of Washington. He has a dual degree in Mechanical Engineering from IIT Madras. His research interests are in AI/ML applications in healthcare engineering, with a focus on rule-based and interpretable decision-making systems.

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