Department of Computer Science
Colloquium Lecture

"Deep Learning for Multi-Modality Information Fusion in Chronic Disease Management"


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Applied Computing/Health Informatics

December 1 • 3-4 pm
Rekhi 214 and Zoom

Lecture Abstract: Chronic diseases pose significant challenges for early risk prediction, diagnosis, and treatment. These tasks require the integration of multi-modality information, such as medical records, medical images (single or multiple modality), and genetic data. However, discovering and combining clinically relevant features from these high-dimensional data sources is not trivial. In this presentation, we will introduce some of the deep learning algorithms that we have designed and developed to address this problem. Specifically, we will cover three topics: 1) how to incorporate prior knowledge into UNet-like architectures to enhance medical image segmentation; 2) how to use graph convolutional networks for graph matching networks to perform tree-like semantic image segmentation; and 3) how to quantify uncertainty and enhance trustworthiness in deep learning models for multi-stage clinical decision-making. We will demonstrate the effectiveness of these methods in our ongoing project to improve the management of coronary artery disease.
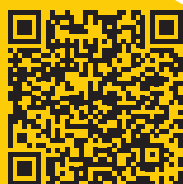
Read more and find the Zoom link.

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