LECTURE SERIES

Mathematical Science Literature

September 28, 2020

9:00am ET- *Virtually*

"From Deep Learning to Deep Understanding"

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Tsinghua University

In this talk I will discuss a couple of research directions for robust AI beyond deep neural networks. The first is the need to understand what we are learning, by shifting the focus from targeting effects to understanding causes. The second is the need for a hybrid neural/symbolic approach that leverages both commonsense knowledge and massive amount of data. Specifically, as an example, I will present some latest work at Microsoft Research on building a pre-trained grounded text generator for task-oriented dialog. It is a hybrid architecture that employs a large-scale Transformer-based deep learning model, and symbol manipulation modules such as business databases, knowledge graphs and commonsense rules. Unlike GPT or similar language models learnt from data, it is a multi-turn decision making system which takes user input, updates the belief state, retrieved from the database via symbolic reasoning, and decides how to complete the task with grounded response.

This lecture will be held virtually.
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