香港浸會大學
HONG KONG BAPTIST UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE
計算機科學系

TMLR Young Scientist SEMINAR

2023 SERIES

Trustworthy Machine Learning and Reasoning Group

Dr. Wei Huang

Postdoctoral Fellow,
RIKEN AIP.

Date: 22 Sept 2023 (Friday)

Time: 14:00 – 15:00 (HKT)

Meeting: https://hkbu.zoom.us/j/6603117755

Exploring Deep Learning Algorithms: A New Perspective through Feature Learning Theory

ABSTRACT

Feature learning theory emerges as a theoretical tool capable of monitoring gradient descent dynamics and characterizing the generalization capabilities of deep learning, offering a fresh lens to comprehend deep learning algorithms. In this presentation, we lay the groundwork of feature learning theory, followed by a deep dive into its application in Graph Neural Networks (GNNs) and out-of-distribution (OOD) generalization scenarios, serving as two pivotal examples. In the context of GNNs, we underscore a notable enhancement in the benign overfitting regime when compared to Convolutional Neural Networks (CNNs). Turning our attention to OOD, we furnish a comprehensive analysis of the feature learning process, culminating in the introduction of a SOTA algorithm.

BIOGRAPHY

Dr. Wei Huang received a PhD degree in computer science from the University of Technology of Sydney, in 2021. He is currently a postdoctoral researcher at RIKEN AIP, Japan, working with Prof. Taiji Suzuki. His research has been published in top conferences and journals such as NeurIPS, ICLR, IJCAI, and TMLR. His scholarly pursuits are primarily centered on deep learning theory, graph neural networks, trustworthy AI, and the development and analysis of large language models.

ENQUIRY

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