



香港中文大學
The Chinese University of Hong Kong

Institute of Theoretical Computer Science and Communications
ITCSC Theory Talk

4 October 2024, Friday

10:30 am – 11:30 am

SHB801, CUHK

Information Theory and Optimization Challenges in Machine-Learning Decoders

By

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Abstract: Decoding linear block codes is a classical yet crucial area of active research. Recently, the success of machine-learning architectures across various fields has led to numerous attempts to design machine-learning-based decoders aimed at enhancing the performance of traditional decoders. Examples include CNN, RNN, ResNet-based, Transformer, and diffusion-based decoders. However, these efforts either introduce learnable parameters to traditional decoders or treat the entire system as a black box during training.

In this talk, we will first provide a brief overview of these machine-learning-based decoders and then highlight some information-theoretic and optimization challenges that have been overlooked in these approaches.

***** ALL ARE WELCOME *****