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THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

From Using to Digging: A Path towards Understanding Larger Models

by

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Time : 11:30 am – 12:30 nn

Venue : Rm 801, Ho Sin-hang Engineering Building, CUHK

Abstract

The prosperous development of the so-called "AI" has made researchers of every discipline think about applying it, yet how to innovatively fuse AI with one's own research direction (instead of plainly adopting) to be challenging topic.

In this talk, I am going to introduce a path my team has taken in the past two years, hoping to shed a light on this challenging topic.

I first discuss a few examples on leveraging small neural models to enhance the signal processing performance in ubiquitous sensing systems. Unlike an end-to-end learning approach taken by majority of the proposals, we stick to a physics-informed model construction and training method, in order to gain sufficient explainability and generalizability.

Then I introduce a potential step-up beyond using neural networks as trainable digital filters. What we propose is for such small models to "inherit" the virtually unlimited vocabulary of LLMs via latent space alignment.

Finally, when considering directly making use of LLMs in, for example, autonomous driving, we realized that the understanding of LLMs is still very much incomplete. As a result, we discuss two of our recent works in understanding LLMs via jailbreak.

Biography

Dr. Jun Luo has been working on wireless sensing, deep learning, and computing system integration for more than two decades and has established a solid foundation on all these topics. Building upon this foundation, his research team has made contributions on mobile/ pervasive computing and smart sensing technologies, by leading several national research projects and corporate labs, aiming to transfer the research outcomes to practical applications. In the meantime, Dr. Luo and his team have kept publishing at relevant venues such as IEEE and ACM top conferences and journals, including MobiCom, CVPR, SenSys, INFOCOM, UbiComp, ToN, and TMC. With 220+ publications, he has earned over 12452 Google Scholar citations, with two top-cited papers both bearing more than 1,000 of them. He is a Fellow of IEEE and AAIA.

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