

CS Seminar

Bayesian Deep Learning for Integrated Intelligence: Bridging the Gap between Perception and Inference

Dr Hao Wang
Computer Science & Artificial Intelligence Lab (CSAIL)
MIT

Date:

November 15, 2018
Thursday
2:15 pm

Venue:

Room 308
Chow Yei Ching Building
The University of Hong Kong

Abstract:

While perception tasks such as visual object recognition and text understanding play an important role in human intelligence, the subsequent tasks that involve inference, reasoning, and planning require an even higher level of intelligence. The past few years have seen major advances in many perception tasks using deep learning models. In terms of higher-level inference, however, probabilistic graphical models, with their ability to expressively describe properties of variables and various probabilistic relations among variables, are still more powerful and flexible. To achieve integrated intelligence that involves both perception and inference, we have been exploring along a research direction, which we call Bayesian deep learning, to tightly integrate deep learning and Bayesian models within a principled probabilistic framework. In this talk, I will present the proposed unified framework and some of our recent work on Bayesian deep learning with various applications including recommendation, social network analysis, healthcare, and representation learning.

About the Speaker:

Dr. Hao Wang is currently a Postdoctoral Associate at the Computer Science & Artificial Intelligence Lab (CSAIL) of MIT, working with Dina Katabi and Tommi Jaakkola. He received his PhD degree from the Hong Kong University of Science and Technology, as the sole recipient of the School of Engineering PhD Research Excellence Award in 2017. He has been a visiting researcher in the Machine Learning Department of Carnegie Mellon University. His research focuses on statistical machine learning, deep learning, and data mining, with broad applications on recommender systems, healthcare, user profiling, social network analysis, text mining, etc. His work on Bayesian deep learning for recommender systems and personalized modeling has inspired hundreds of follow-up works published at top conferences such as AAI, ICML, IJCAI, KDD, NIPS, SIGIR, and WWW. It has received over 390 citations, becoming the most cited paper at KDD 2015. In 2015, he was awarded the Microsoft Fellowship in Asia and the Baidu Research Fellowship for his innovation on Bayesian deep learning and its applications on data mining and social network analysis.

All are welcome!

For enquiries, please call 2859 2180 or email
enquiry@cs.hku.hk
Department of Computer Science
The University of Hong Kong

