Department of Computer Science
香港城市大學
City University of Hong Kong

COMPUTER SCIENCE COLLOQUIUM

Bayesian Network Structure Learning and Optimization

SPEAKER **Prof Shuwei Zhu**

Assistant Professor
Department of Artificial Intelligence and Computer Science, Jiangnan University, Wuxi, China

DATE 13 May, 2024 (Mon)
TIME 11:00 AM - 12:00 PM
VENUE G7315, Green Zone, Yeung Kin Man Academic Building, City University of Hong Kong, Kowloon Tong, Hong Kong

ABSTRACT

Bayesian networks (BNs) are probabilistic graphical models regarded as some of the most compelling theoretical models in the field of representation and reasoning under uncertainty. Bayesian network structure learning (BNSL) from data is an NP-hard problem. Genetic algorithms are powerful for solving combinatorial optimization problems, but the lack of effective guidance results in slow convergence and low accuracy regarding BNSL. To address this problem, we propose a mutual information (MI) guided genetic algorithm (MIGA) for BNSL, which uses MI to effectively search BN structures. Results will be shown on eleven well-known benchmark datasets.

BIOGRAPHY

Dr. Shuwei Zhu is assistant professor at Department of Artificial Intelligence and Computer Science, Jiangnan University, Wuxi, China. He received the Ph.D. degree in Control Science and Engineering from Tongji University, Shanghai, China, in 2021. He has been awarded to pursue joint Ph.D. study in Michigan State University, East Lansing, MI, USA, from 2019 to 2021. His research interests focus on evolutionary computation, machine learning, data-driven optimization and applications.

All are welcome!

In case of questions, please contact Prof Zhichao Lu at zhichao.lu@cityu.edu.hk, or visit the CS Departmental Seminar Web at https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums.