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DEPARTMENT OF
COMPUTER SCIENCE
計算機科學系

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Distinguished Lecture Series

Challenges in Machine Learning Research



18 February 2022 (Friday)
10:30-11:30am GMT+8 (Hong Kong Time)



Zoom
(The meeting details will only be provided to registrants)



ABSTRACT

Artificial intelligence became an indispensable tool to advance science and industry, and machine learning is one of the main driving forces to boost this movement.

In this talk, I will first introduce the activities of the RIKEN Center for Advanced Intelligence Project (RIKEN-AIP): RIKEN is Japan's largest and most comprehensive research organization for basic and applied science, and AIP is working on advancing fundamental artificial intelligence technologies (machine learning, optimization, etc.), their applications in accelerating scientific research (cancer, material, etc.) and solving socially critical problems (natural disaster, elderly healthcare, etc.), and discuss social aspects of artificial intelligence (ethical guidelines, personal data management, etc.).

Then I will give an overview of our recent research achievements on reliable machine learning: In modern applications of machine learning, it becomes increasingly important to consider robustness against various factors such as data bias (caused by changing environments, privacy concerns, etc.) and insufficient and inaccurate information (due to weak supervision, label noise, etc.). We have developed theories and algorithms of machine learning to cope with such problems.

Prof. Masashi Sugiyama

Professor
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Masashi Sugiyama received a Ph.D. degree in Computer Science from Tokyo Institute of Technology, Japan, in 2001. After experiencing assistant and associate professors at the same institute, he became a professor at the University of Tokyo in 2014. Since 2016, he has concurrently served as Director of RIKEN Center for Advanced Intelligence Project, leading the groups of fundamental AI technologies, AI applications, and social issues of AI. His research interests include theories and algorithms of machine learning and statistical data analysis. He (co)-authored various machine learning monographs, including *Machine Learning in Non-Stationary Environments* (MIT Press, 2012), *Density Ratio Estimation in Machine Learning* (Cambridge University Press, 2012), *Statistical Reinforcement Learning* (Chapman and Hall, 2015), *Introduction to Statistical Machine Learning* (Morgan Kaufmann, 2015), *Variational Bayesian Learning Theory* (Cambridge University Press, 2019), and *Machine Learning from Weak Supervision* (MIT Press, in press). He served as a Program Chair and General Chair for NeurIPS2015 and NeurIPS2016 and a Program Chair for AISTATS2019. He was a recipient of the Japan Academy Medal in 2017.



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