



中央研究院 資訊科學研究所  
Institute of Information Science, Academia Sinica

# Distinguished Lecture Series

## Green Learning: Methodology, Examples and Outlook



Tuesday, Jan. 10, 2023 10:00am-12:00am

Auditorium 106,  
at IIS new Building / Live stream will be available

### C.-C. Jay Kuo

Distinguished Professor, University of Southern California

#### Abstract

The rapid advances in artificial intelligence in the last decade are primarily attributed to the wide applications of deep learning (DL). Yet, the high carbon footprint yielded by larger DL networks is a concern to sustainability. Green learning (GL) has been proposed as an alternative to address this concern. GL is characterized by low carbon footprints, small model sizes, low computational complexity, and mathematical transparency. It offers energy-effective solutions in cloud centers as well as mobile/edge devices. It has three main modules: 1) unsupervised representation learning, 2) supervised feature learning, and 3) decision learning. GL has been successfully applied to a few applications. This talk provides an overview on the GL solution, its demonstrated examples, and technical outlook. The connection between GL and DL will also be discussed.

#### Biography

Dr. C.-C. Jay Kuo received his Ph.D. degree from the Massachusetts Institute of Technology in 1987. He is now with the University of Southern California (USC) as William M. Hogue Professor, Distinguished Professor of Electrical and Computer Engineering and Computer Science, and Director of the Media Communications Laboratory. His research interests are in visual computing and communication. He is a Fellow of AAAS, NAI, IEEE and SPIE and an Academician of Academia Sinica. Dr. Kuo has received a few awards for his research contributions, including the 2019 IEEE Computer Society Edward J. McCluskey Technical Achievement Award, the 2019 IEEE Signal Processing Society Claude Shannon-Harry Nyquist Technical Achievement Award, the 72nd annual Technology and Engineering Emmy Award (2020), and the 2021 IEEE Circuits and Systems Society Charles A. Desoer Technical Achievement Award. He has guided 164 students to their PhD degrees and supervised 31 postdoctoral research fellows.

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