Keynote II

Topic: Opportunities and Challenges of Large-Scale Vision Foundation Models

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Abstract:

As one of the most important research branches in artificial intelligence, computer vision gives machines the ability to “see” the world like humans. Its technological development has undergone two waves of revolution in the past decade, with the first wave of deep learning (around 2013) followed by a paradigm shift in learning with pre-trained models (around 2020). A new trend in artificial intelligence research is called large-scale foundation models, which is likely driving an even stronger third wave of revolution in computer vision. What opportunities and challenges will this bring to academia and industry? How can general artificial intelligence be realized through unified foundation models for multi-modal tasks? This talk will address these questions in the context of real-world applications.

About the Speaker:

Wen-Huang Cheng is Professor with the Department of Computer Science and Information Engineering, National Taiwan University (NTU). His current research interests include artificial intelligence, multimedia, computer vision, machine learning, digital transformation, and financial technology. He has actively participated in international events and played important leading roles in prestigious journals and conferences and professional organizations, including Editor-in-Chief for IEEE CTSoc News on Consumer Technology, Senior Editor for IEEE Consumer Electronics Magazine, Associate Editor for IEEE Transactions on Multimedia (T-MM), General Chair for ACM MMAsia (2023), IEEE ICCE-TW (2023, 2022), IEEE ICME (2022) and ACM ICMR (2021), Chair for IEEE Multimedia Systems and Applications (MSA) technical committee, governing board member for IAPR. He has received numerous research and service awards, including the Best Paper Award of 2021 IEEE ICME and the Outstanding Associate Editor Award of IEEE T-MM (2021 and 2020, twice). He is IEEE Distinguished Lecturer, ACM Distinguished Member, and IET Fellow.

Research Interests:

Artificial Intelligence, Multimedia, Computer Vision, Machine Learning,

Digital Transformation, Financial Technology

Major Honors and Awards:

- 2021 Future Tech Award, MOST (Ministry of Science and Technology of Taiwan)
- 2021 Taiwan's National Innovation Award
- 2021 & 2020 Outstanding Associate Editor Award of IEEE Transactions on Multimedia
- 2021 Best Associate Editor Award of Multimedia Systems
- Best Paper Award of 2021 IEEE International Conference on Multimedia & Expo (ICME)
- Third Place Winner (out of 56), IEEE ICCV 2021 - Chalearn 3D High-Fidelity Mask Face Presentation Attack Detection Challenge
- IEEE Distinguished Lecturer (2021)
- ACM Distinguished Member (2020)
- Fellow of Institute of Engineering and Technology (IET) (2020)
- First Place Winner, IEEE CVPR 2020 - Look Into Person (LIP) Challenge (Track: Image-based Multi-pose Virtual Try-on Challenge)
- Third Place Winner (out of 272), ECCV 2020 - GigaVision Challenge
- 2018 Collaborative Research Award of Microsoft Research Asia (MSRA)