Computer Vision: A Journey of Pursuing 3D World Understanding

SPEAKER **Prof. Xiaoming Liu**

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ABSTRACT

The real world we are living in is composed of 3D objects. When a camera takes a picture or video many of the 3D information inevitably get lost due to the camera projection. As one of the most active fields in AI computer vision aims to develop algorithms that can derive meaningful information from the visual content. One fundamental quest of computer vision is to recover the 3D information and thus enables a faithful 3D understanding of the world through the lens of the camera. In this talk I will share some of our experiences in pursuing the 3D world understanding addressing problems such as 3D reconstruction 3D detection depth estimation velocity estimation etc. The solutions to these problems have been applied to applications including biometrics autonomous driving and digital human/face. In the end I will also briefly overview other research efforts in the Computer Vision Lab at Michigan State University such as anti-spoofing anti-deepfake AIGC for vision tasks etc.

BIOGRAPHY

Dr. Xiaoming Liu is the MSU Foundation Professor and Anil and Nandita Jain Endowed Professor at the Department of Computer Science and Engineering of Michigan State University (MSU). He is also a visiting scientist at Google Research. He received Ph.D. degree from Carnegie Mellon University in 2004. Before joining MSU in 2012 he was a research scientist at General Electric (GE) Global Research. He works on computer vision machine learning and biometrics especially on face related analysis and 3D vision. Since 2012 he helps to develop a strong computer vision area in MSU who is ranked top 15 in US according to the 5-year statistics at csrankings.org. He is an Associate Editor of IEEE Transactions on Pattern Analysis and Machine Intelligence. He has authored more than 200 scientific publications and has filed 29 U.S. patents. His work has been cited over 20000 times with an H-index of 74. He is a fellow of The Institute of Electrical and Electronics Engineers (IEEE) and International Association for Pattern Recognition (IAPR).

All are welcome!

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