

# Yutian Lei

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## EDUCATION

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**Chinese University of Hong Kong, Shenzhen**      Guangdong, China  
B.E. in Computer Science and Engineering, GPA 3.89/4.00 (4/299)      09/2015 – 06/2020  
**Carnegie Mellon University**      Pittsburgh, PA  
M.S. in Robotics, GPA 4.19/4.00      Expected, 12/2022  
Selected Coursework: Computer Vision (A+), Kinematics, Dynamics and Control (A+), Learning for 3D Vision (A+), Multimodal Machine Learning (A), Learning-Based Image Synthesis (A+)

## RESEARCH EXPERIENCE

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**DeLight Lab, Carnegie Mellon University**      Pittsburgh, PA  
Adversarial Calibration between Modalities      06/2021 – Present  
♦ Proposed a simple pipeline to directly transfer representation and knowledge between modalities instead of redesigning or adapting the whole model. The calibration networks for Lidar, WiFi, and infrared achieve comparable results on computer vision tasks with image inputs;

**DeLight Lab, Carnegie Mellon University**      Pittsburgh, PA  
Aligned Dense Supervision for Full-Range Monocular Detection of Human Body Meshes      03/2021 – Present  
♦ Proposed Aligned Dense Supervision (ADS) that aggregates supervision among body meshes and between local-global regression towards a full-range mesh detection solution;  
♦ Reached comparable performances on local metrics and much better performances on our proposed global metrics for multi-person 3D mesh estimation;

**DeLight Lab, RISS Program, Carnegie Mellon University**      Pittsburgh, PA  
Person-in-WiFi: Fine-grained Person Perception using WiFi      06/2019 – 10/2019  
♦ Proposed a novel algorithm based on MUSIC to make the WiFi Data less sensitive to the location and orientation of the antennas as well as free from variance of random noise from the environments;  
♦ Built a real-time and highly portable WiFi perception system;

**Robotics and AI Laboratory, Chinese University of Hong Kong, Shenzhen**      Guangdong, China  
Calligraphy Robot: Creating and Writing as an Intelligent Calligrapher      06/2018 – 06/2020  
♦ Developed a GAN-based algorithm to generate Chinese fonts, which can imitate anyone's style;  
♦ Developed an algorithm using deep Q-learning with LSTM that allows the robot to write calligraphy based on any inputted Chinese characters;

## WORK EXPERIENCE

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**UBTECH Robotics**      Guangdong, China  
Research Intern      03/2019 – 06/2019  
♦ Implemented a multimodal emotion recognition algorithm for video using acoustic and facial features. The algorithm can achieve a competitive accuracy of 60.12% compared to state of art baseline with lower inference time;

## LEADERSHIP

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**Minister, Academic Committee of the Student Union of CUHKSZ**      06/2016 – 05/2017

## PUBLICATIONS

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**Yutian Lei**, Abhinav Agarwalla, Dong Huang. "Adversarial Calibration between Modalities". In Association for the Advancement of Artificial Intelligence (AAAI), 2022. (Submitted)  
Tiang Xiang, **Yutian Lei**, Jun Liu, Dong Huang. "Aligned Dense Supervision for Full-Range Monocular Detection of Human Body Meshes." IEEE Winter Conference on Applications of Computer Vision (WACV). (Submitted)  
**Yutian Lei**, Fei Wang, Dong Huang. "Signal Processing for Environment-Invariant WiFi Human Sensing". Robotics Institute Summer Scholar' Working Papers Journals Volume 7(2019): 105-110.  
**Yutian Lei**, Liguang Zhou, Tianjiao Pan, Huihuan Qiann, Zhenglong Sun. "Learning and Generation of Personal Handwriting Style Chinese Font". In Proceedings of the IEEE ROBIO, December, 2018