

Liuhaio Ge

Contact Information

Nanyang Technological University *E-mail:* ge0001ao@e.ntu.edu.sg
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Education

Nanyang Technological University, Singapore

Doctor of Philosophy, January 2019

Research Topic: Real-time 3D hand pose estimation using RGB-D camera

GPA: 4.83/5.0

Southeast University, Nanjing, P.R. China

Master of Engineering in Control Theory & Engineering, June 2014

Nanjing University of Aeronautics and Astronautics, Nanjing, P.R. China

Bachelor of Engineering in Detection Guidance and Control Technology, June 2011

Research Interest

- 3D Hand Pose Estimation, Gesture Analysis
- 3D Vision, Depth Cameras and RGB-D Analysis
- Virtual Reality and Augmented Reality
- Vision-based Human-Computer Interaction

Research & Professional Experience

Deep Learning Research Intern at Snap Inc. Research, March 2018 – October 2018

- 3D Hand Shape and Pose Estimation from a Single RGB Image.
*Accepted by the IEEE Conference on Computer Vision and Pattern Recognition (CVPR'19, **Oral**)*

Ph.D. Candidate at Institute for Media Innovation, NTU, August 2015 – December 2018

- Weakly-supervised Method for 3D Hand Pose Estimation from Monocular RGB Images.
*Accepted by the European Conference on Computer Vision (ECCV'18, **Oral**)*
- Point Sets-based Point-wise Regression Method for Real-time 3D Hand Pose Estimation from Depth Images.
Accepted by the European Conference on Computer Vision (ECCV'18)
- Point Sets-based Holistic Regression Method for Real-time 3D Hand Pose Estimation from Depth Images.
*Accepted by the IEEE Conference on Computer Vision and Pattern Recognition (CVPR'18, **Spotlight**)*
- Hands in the Million Challenge on 3D Hand Pose Estimation.
Won the Third Place, 2017
- 3D Convolutional Neural Networks-based Method for Real-time 3D Hand Pose Estimation from Depth Images.
Accepted by the IEEE Conference on Computer Vision and Pattern Recognition (CVPR'17)
- Multi-View Convolutional Neural Networks-based Method for Real-time 3D Hand Pose Estimation from Depth Images.
Accepted by the IEEE Conference on Computer Vision and Pattern Recognition (CVPR'16)

Conference Publications

- **Liuhao Ge**, Zhou Ren, Yuncheng Li, Zehao Xue, Yingying Wang, Jianfei Cai and Junsong Yuan. 3D Hand Shape and Pose Estimation from a Single RGB Image. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'19)*, 2019 (**Oral**).
- **Liuhao Ge**, Zhou Ren and Junsong Yuan. Point-to-Point Regression PointNet for 3D Hand Pose Estimation. In *Proc. European Conf. on Computer Vision (ECCV'18)*, 2018.
- Yujun Cai, **Liuhao Ge**, Jianfei Cai and Junsong Yuan. Weakly-supervised 3D Hand Pose Estimation from Monocular RGB Images. In *Proc. European Conf. on Computer Vision (ECCV'18)*, 2018 (**Oral**).
- **Liuhao Ge**, Yujun Cai, Junwu Weng and Junsong Yuan. Hand PointNet: 3D Hand Pose Estimation using Point Sets. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'18)*, 2018 (**Spotlight**).
- **Liuhao Ge**, Hui Liang, Junsong Yuan and Daniel Thalmann. 3D Convolutional Neural Networks for Efficient and Robust Hand Pose Estimation from Single Depth Images. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'17)*, 2017.
- **Liuhao Ge**, Hui Liang, Junsong Yuan and Daniel Thalmann. Robust 3D Hand Pose Estimation in Single Depth Images: from Single-View CNN to Multi-View CNNs. In *Proc. IEEE Conf. on Computer Vision and Pattern Recognition (CVPR'16)*, 2016.

Journal Publications

- **Liuhao Ge**, Hui Liang, Junsong Yuan and Daniel Thalmann. Real-time 3D Hand Pose Estimation with 3D Convolutional Neural Networks. In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2018.
- **Liuhao Ge**, Hui Liang, Junsong Yuan and Daniel Thalmann. Robust 3D Hand Pose Estimation from Single Depth Images using Multi-View CNNs. In *IEEE Transaction on Image Processing (TIP)*, 2018.
- Hui Liang, Junsong Yuan, Jun Lee, **Liuhao Ge** and Daniel Thalmann. Hough Forest With Optimized Leaves for Global Hand Pose Estimation With Arbitrary Postures. In *IEEE Transactions on Cybernetics (T-CYB)*, 2017.

Awards & Honors

- NTU Research Scholarship, August 2015 – August 2018
- Third Place at the 2017 Hands in the Million Challenge on 3D Hand Pose Estimation, October 2017
- First Class Prize of the National Post-Graduate Mathematical Contest in Modeling, December 2012 (Top 3%)
- Excellent Student First Class Scholarship, NUAA, AY 2008–2009, AY 2009–2010 (Top 5%)
- National Scholarship, AY 2008–2009 (Top 2%)

Programming Skills

- C++, Python, Lua, MATLAB
- Torch, PyTorch, TensorFlow, Caffe

Selected Courses

- Mathematics: Computational Methods, Probability & Random Process, Mathematical Statistics
- CV & AI: Machine Vision, Image Analysis & Pattern Recognition, Principles of Artificial Intelligence