

## EDUCATION

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### University of Florida

*Ph.D. Student of Computer Science*

Florida, the U.S.  
2021.08-2025.08 (expected)

### Sun Yat-Sen University

*Master of Electronics and Communication Engineering*

- GPA: 3.9/4.0

Guangzhou, China  
2018.08-2020.06

### Sun Yat-Sen University

*Bachelor of Communication Engineering*

- GPA: 3.7/4.0

Guangzhou, China  
2014.08-2018.06

## SKILLS

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### Engineering

- **Coding Language** - Python, C/C++, Matlab, Julia
- **Engineering Tools/Skills** - OpenCV, Open3D, Pytorch, Matplotlib, QtCreator, Common Deep Learning Models, Embedded Development, Software Design, 3D Visualization

## RESEARCH

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### Hand-Computer Interaction

*Estimate 3D hand mesh from images and establish hand-objects interaction in VR/AR* 2020.11-2021.07

- Built a large-scale dataset XRHand, a multi-view hand keypoints dataset with 800K+ hand images
- Designed a stable and accurate convolutional neural network (CNN) for 2.5D hand keypoints estimation
- Proposed an efficient algorithm to recover hand mesh from hand image. The algorithm had been deployed on a forthcoming AR product

### Two-Factor Identity Verification Using Facial Identity and Facial Actions

*Verify the identity of users based on both facial identity and facial actions* 2020.09-2020.11

- Designed a software for facial identity collection, built a facial identity dataset for evaluating the effectiveness of facial identity algorithms

### Image-Based Head Pose Estimation

*Predict the orientation of head from RGB face image and depth face image* 2019.09-2020.07

- Reconstructed 3D face and estimated head pose from depth image using Kinect depth sensor
- Proposed a lightweight convolutional neural network (0.88 MB) to estimate head pose from RGB images
- Experiment results showed that the proposed network outperformed the state-of-the-art methods in terms of accuracy and processing speed

### Analysis of Children with Autism Spectrum Disorder (ASD) by Non-Verbal Language

*Pre-diagnosis of ASD by behavior data including hand gesture, eye gaze and body motion.* 2018.07-2019.09

- Designed an interactive diagnosis chamber for collecting multi-view behavior data using RGB-D sensors and providing visual feedback
- Built SYSUGaze dataset, an eye-tracking image dataset collected from 105 participants
- Proposed a robust CNN model, estimating eye gaze from single RGB image. The proposed model is able to estimate eye gaze even in case of partially occluded eyes
- Designed eye contact detection system based on multiple sensors fusion

## PROJECTS

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- Human gait analysis based on wearable pressure sensor 2020
- Product defect detection based on high-performance edge computing platform 2019

## HONORS/AWARDS

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- Outstanding Graduate (2020)
- Academic First-Class Scholarship (2019)
- Academic Second-Class Scholarship (2018)
- MCM/ICM Meritorious Winner (2016)

## PUBLICATIONS

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- **X. Li**, D. Zhang, M. Li and D. J. Lee. Accurate Head Pose Estimation Using Image Rectification and Lightweight Convolutional Neural Network. *IEEE Transactions on Multimedia*. (Under Review)
- Z. Sun, D. J. Lee, D. Zhang and **X. Li**. Concurrent Two-factor Identity Verification Using Facial Identity and Facial Actions. *SPIE Electronic Imaging*, 2021
- Z. Qian, A. E. Bowden, D. Zhang, J. Wan, W. Liu, **X. Li**, D. Baradoy and D. T. Fullwood. Inverse Piezoresistive Nanocomposite Sensors for Identifying Human Sitting Posture. *Sensors*, 2018