

EDUCATION BACKGROUND

- **University of California San Diego** La Jolla, CA
Master of Science in Computer Science; GPA: 4.0 Sep. 2019 – Present
- **Tsinghua University** Beijing, China
Bachelor of Science in Electronic Engineering; GPA: 3.7 Aug. 2015 – July. 2019

ACADEMIC EXPERIENCE

- **Research Assistant** Feb 2020 - Present
Supervised by Xiaolong Wang at CSE department, UCSD
 - **Human Grasps Generation:** Study on natural human grasp generation given a 3D object in the world. Utilize the hand-object contact consistency to design a novel human grasp generation model in a self-supervised way.
 - **Hand-Object Interaction:** Estimating 3D hand mesh and object 6D pose from a single RGB image. Build a joint learning framework with contextual reasoning between hand and object under semi-supervised learning.
- **Research Assistant** Sep 2017 - July 2018
Supervised by Guijin Wang at Visual Computing Lab, Tsinghua University
 - **Depth-based 3D Hand Pose Estimation:** Presented a light and efficient approach for fast and accurate hand pose estimation from a single depth image. Achieved state-of-the-art accuracy on three public hand pose datasets.
 - **Binocular Fingertip Estimation:** Made use of Leap Motion to collect finger binocular images and calculated 3D coordinates of fingertips by using stereo vision and near-field estimation.

INDUSTRIAL EXPERIENCE

- **Assistant Research Engineer** July 2018 - Oct 2018
Noah's Ark Lab
 - **Human Face Image Quality Assesment:** Responsible for blind face image quality assessment. Combined statistical approaches and deep learning based approaches to conduct automatic face image quality assessment.
- **Computer Vision Engineer** July 2017 - Sep 2017
Institute of Deep Learning, Baidu, Inc.
 - **Fine-grained Image Classification:** Established a high efficient processing pipeline for fine-grained flower image classification. Proposed an improved version of Softmax loss. Made successful market appearance of the classifier.

PUBLICATION

1. *Semi-Supervised 3D Hand-Object Poses Estimation with Interactions in Time*, **Shaowei Liu***, Hanwen Jiang*, Jiarui Xu, Sifei Liu, Xiaolong Wang, CVPR 2021 Under review [\[pdf\]](#)
2. *Hand-Object Contact Consistency Reasoning for Human Grasps Generation*, Hanwen Jiang*, **Shaowei Liu***, Jiashun Wang, Xiaolong Wang, CVPR 2021 Under review [\[pdf\]](#)
3. *Light and Fast Hand Pose Estimation From Spatial-Decomposed Latent Heatmap*, **Shaowei Liu**, Guijin Wang, Pengwei Xie, Cairong Zhang, IEEE Access 2020 [\[pdf\]](#)
4. *Depth-based 3D Hand Pose Estimation*, **Shaowei Liu**, Outstanding Undergraduate Thesis at Tsinghua University 2019

SKILLS AND INTERESTS

- **Programming Language:** Python, C++, Java, MATLAB, Go, Cuda, Bash, Latex and SQL
- **Hardware:** FPGA, Verilog, Mips Instruction, Modelsim, Multisim, Vivado, and Single-chip Development
- **Software:** Git, Docker, OpenMP, Kubernetes, Opencv, PyTorch, Caffe, TensorFlow, scikit-learn, Weka
- **Language:** Mandarin, English (fluent)