

# Jiaming Sun

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## EDUCATION

### SUSTECH

B.ENG IN COMPUTER SCIENCE AND ENGINEERING

2013 - 2017 | Shenzhen, China.

## COURSEWORK

### ONLINE COURSES

- MIT - Underactuated Robotics
- Stanford - CS231n: Convolutional Neural Networks for Visual Recognition
- Coursera - Robotics Specialization (Provided by UPenn)
- Coursera - Control of Mobile Robot (Provided by Georgia Tech)
- Coursera - Machine Learning (Provided by Stanford)
- edX - Autonomous Navigation for Flying Robot (Provided by TUM)
- Udacity - Computer Vision (Provided by GeorgiaTech)
- Coursera - Algorithms Design and Analysis (Provided by Stanford)

### UNDERGRADUATE (SELECTED)

- Software Engineering
- Computer Organization and Design
- Operating Systems
- Algorithms
- Mathematical Modeling
- Signal and System
- Advanced Linear Algebra

## SKILLS

### PROGRAMMING

Python • C++ • CUDA • Matlab • Javascript •  $\LaTeX$  • Mathematica • Java

### SOFTWARE

PyTorch • TensorFlow • MXNet • Caffe  
Blender • ROS • SolidWorks • Adobe CC Suite

## LINKS

Homepage:// [jiamingsun.ml](http://jiamingsun.ml)

Github:// [JiamingSuen](https://github.com/JiamingSuen)

LinkedIn:// [jiaming-suen-57a52794](https://www.linkedin.com/in/jiaming-suen-57a52794)

Zhihu:// [JiamingSuen](https://www.zhihu.com/people/jiaming-suen)

## AWARDS

2013 - 2015 Full Pioneer Scholarship

## SERVICE

- Conference reviewer for ICCV21 and ACCV20. Assisted reviewing for NeurIPS20 and CVPR(19,20).

## EXPERIENCE

### COMPUTER VISION RESEARCHER | SENSETIME, MIG-3D&AR

Nov. 2018 – Now | Supervised by [Prof. Xiaowei Zhou](#)

- Leading a research team of 12 people, working on 3D Computer Vision and its applications in Augmented/Mixed Reality.
- Full-stack 3D Vision and Deep Learning R&D experiences on data acquisition/annotation pipeline, algorithm design and real-world deployment.
- Learning-based local feature extraction and matching for visual localization, SLAM and object pose estimation. The local feature network we developed has shipped into the visual localization pipeline and the "Cloud Anchor" module in [SenseAR](#) and improves the localization success rate by 40%.
- Semantic 3D reconstruction, developed a web-based semi-automatic 3D semantic label annotation tool that can speed-up the traditional 2D annotation process by 20x.
- Integrated 3D object detection (6D pose estimation) and tracking for both AR and Autonomous Driving scenarios, with a focus on leveraging spatial-temporal memory to improve accuracy.
- Published two papers (including one oral) in CVPR2021 (see below).
- Several on-going research works including 6D pose estimation for generic objects, Transformer-based MVS and new visual localization pipeline under severe seasonal changes.

### RESEARCH MANAGER | ZJU, CAD&CG NATIONAL KEY LAB

Jun. 2018 – Now | Advised by [Prof. Xiaowei Zhou](#)

- Manage junior grad student research and student recruiting.
- 3D object detection with stereo images, with a novel design to guide the network to learn the category-level object shape prior for better disparity estimation (accepted by CVPR 2020).
- Self-supervised Scene Flow estimation with CNN, with a focus on resolving dynamic object motion with a novel spatial consistency loss. Iterative cost volume residual processing for optical flow, disparity and MVS.

### ALGORITHM ENGINEER INTERN | DJI, MACHINE LEARNING GROUP

Jun. 2017 – Jun. 2018 | Mentored by [Dr. Xiaozhi Chen](#)

- Worked on multiple research problems in an internal autonomous driving project.
- 3D object detection and tracking, investigated with state-of-the-art algorithms including MV3D, AVOD and F-PointNet, etc. Implemented a detection-tracking CNN into the 3D detection pipeline.
- Monocular/stereo depth estimation with CNN, investigated in depth with DeMoN, SfM-Net, CRL, PSMNet, etc.

## PUBLICATIONS

- NeuralRecon: Real-time Coherent 3D Reconstruction with Monocular Video. CVPR 2021 (oral). Jiaming Sun, Yiming Xie, Linghao Chen, Hujun Bao, Xiaowei Zhou.
- LoFTR: Detector-Free Local Feature Matching with Transformers. CVPR 2021. Jiaming Sun, Zehong Shen, Yang Wang, Hujun Bao, Xiaowei Zhou.
- Disp R-CNN: Stereo 3D Object Detection via Shape Prior Guided Instance Disparity Estimation. CVPR 2020. Jiaming Sun, Linghao Chen, Yiming Xie, Siyu Zhang, Qinghong Jiang, Xiaowei Zhou and Hujun Bao.
- SMAP: Single-Shot Multi-Person Absolute 3D Pose Estimation. ECCV 2020. Jianan Zhen, Qi Fang, Jiaming Sun, Wentao Liu, Wei Jiang, Hujun Bao, Xiaowei Zhou.
- You Don't Only Look Once: Constructing Spatial-Temporal Memory for Integrated 3D Object Detection and Tracking. In submission. Jiaming Sun, Yiming Xie, Siyu Zhang, Hujun Bao, Xiaowei Zhou.