

# Yang ZHOU

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## EDUCATION

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### ShanghaiTech University

Shanghai, China

B.E. in Computer Science and Technology

Sep. 2015 – Jul. 2019

- GPA: 3.71/4.0 Rank: 7%

- Core courses:

|                                       |            |                  |            |
|---------------------------------------|------------|------------------|------------|
| Computer Vision                       |            | Deep Learning    | (graduate) |
| Robotics                              | (graduate) | Machine Learning | (graduate) |
| Simultaneous Localization and Mapping | (graduate) | Mechatronics     | (graduate) |

### The University of Chicago

Chicago, USA

Summer Session

Aug. 2016

- Course: Statistical Models and Methods

## PUBLICATION

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Y. Zhou, “Extrinsic Calibration Algorithm between a Stereo Visual System and a 3D LiDAR,” Carnegie Mellon University Robotics Institute Summer Scholars Working Papers Journal, 2018, pp. 157-165

## RESEARCH EXPERIENCE

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Research Interest: **SLAM, Event-based Vision, Scene Understanding, Robotics, Computer Vision**

### Robot Perception Lab, Carnegie Mellon University

Pittsburgh, USA

*Undergraduate Research Intern*, supervised by Prof. *Michael Kaess*

Jun. 2018 – Dec. 2018

- Proposed novel extrinsic calibration algorithm between stereo visual system and a 3D LiDAR.
- Developed efficient extrinsic calibration toolbox in C++.
- Presented poster at Robotics Institute Summer Scholars research showcase.
- Developed novel algorithm for 3D LiDAR intrinsic calibration. (in progress)

### Mobile Perception Lab, ShanghaiTech University

Shanghai, China

*Bachelor Thesis*, advised by Prof. *Laurent Kneip* and Prof. *Michael Kaess*

Oct. 2018 – Present

- Proposed novel pipeline of Stereo Event-based Visual Inertial Odometry. (in progress)

### Living Machine Laboratory, ShanghaiTech University

Shanghai, China

*Undergraduate Research Assistant*, supervised by Prof. *Andre Rosendo*

Mar. 2018 – May. 2018

- Proposed novel framework to detect manipulator malfunction using a monocular camera.
- Implemented tools to control JACO 2 Robotic Arm in ROS with inverse kinematics.

### The Perception, Learning and UnderStanding Group, ShanghaiTech University

Shanghai, China

*Undergraduate Research Assistant*, supervised by Prof. *Xuming He*

Feb. 2017 – Mar. 2018

- Developed segmentation network for video semantic segmentation.
- Proposed and realized a 6-DoF object pose estimation algorithm using deep learning in PyTorch.

### Mobile Autonomous Robotic Systems Lab, ShanghaiTech University

Shanghai, China

*Summer Research Intern*, supervised by Prof. *Sören Schwertfeger*

Jun. 2016 – Aug. 2016

- Developed flight control module using localization from the optitrack to hover the drone.

## PROJECT & LEADERSHIP EXPERIENCE

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### ShanghaiTech RoboMaster Team

Shanghai, China

*Captain, Founder*

Oct. 2017 – May. 2018

- Led cross-functional project team of 35 to build 6 robots with different functions for RoboMaster.
- Designed perception, planning, and decision-making system.
- Developed a perception system for object detection and pose estimation using deep learning.

### ShanghaiTech Undergraduate RoboCup Rescue Team

Shanghai, China

*Leader of Computer Vision group, Co-founder*

Feb. 2017 – Apr. 2018

- Developed SLAM system using 2D LiDAR and RGB-D sensor.
- Developed QR code and motion detection system.

## WORKING EXPERIENCE

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### Tencent United Security Laboratory, Tencent Inc.

Shanghai, China

*Security Researcher*

Aug. 2017 – Dec. 2017

- Analyzed perception system of autonomous driving vehicle in security research.
- Proposed adversarial attack method to evaluate the robustness of the visual perception system.

## TEACHING EXPERIENCE

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### CS110 Computer Architecture, ShanghaiTech University

Shanghai, China

*Teaching Assistant*

Mar. 2018 – Jun. 2018

- Led discussion session on C++/MIPS/Parallel Computing and held office hour for 110 sophomores.
- Designed two assignments and created problems for three exams.

### SI100 Introduction to Information Science and Technology, ShanghaiTech University

Shanghai, China

*Teaching Assistant*

Mar. 2017 – Jun. 2017

- Led discussion session on Electronics/Python/Control/ROS and held office hour for 380 freshmen.

### CS100 Programming, ShanghaiTech University

Shanghai, China

*Teaching Assistant*

Sep. 2016 – Feb. 2017

- Led discussion session on Rust/Python and held office hour for 120 freshmen.

## HONOR & AWARDS

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- Third Prize, RoboMaster 2018 Robotics Competition, Regional May. 2018
- Champion, Manipulator Challenge at RoboCup Rescue 2018 Competition, China Apr. 2018
- Third Prize, RoboCup Rescue 2018 Competition, China Apr. 2018
- Academic Excellence Scholarship, ShanghaiTech, Twice (Top 15%) Dec. 2017 & Dec. 2016
- Outstanding Student, ShanghaiTech, Triple (Top 5%) Nov. 2018 & Dec. 2017 & Dec. 2016
- Honorable Mention of 2017 Mathematical Contest in Modeling Apr. 2017

## VOLUNTEER EXPERIENCE

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- Student volunteer for Robotics: Science and Systems Jun. 2018
- Student volunteer for ShanghaiTech Symposium on Information Science and Technology Jul. 2017

## SKILLS

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**Programming languages:** C/C++, Python, Matlab, Rust, Arduino

**Tools:** ROS, Pytorch, Tensorflow, OpenCV, Eigen, PCL, GTSAM, SolidWorks, CMake, LaTeX, Git

**Hardware:** ZED, Xtion pro live, Kinect, Velodyne HDL-64E/VLP-16, Kinova JACO 2