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- More information and auxiliary documents can be found on my homepage  
<https://yuzhou42.github.io/>

EDUCATION	<b>Joint Master between Northeastern University and the Chinese Academy of Sciences (CAS)</b> , Shenyang, China MEng, Control Engineering. GPA: 3.59/4.00; Rank: 1/168. <b>Northeastern University</b> , Qinhuangdao, China BEng, Automation. GPA: 4.10/4.33; Rank: 4/196.	Sep. 2014 — Jan. 2017 Sep. 2010 — Jun. 2014
WORK EXPERIENCE	<b>Associate Scientist</b> <i>Temasek Laboratories, Singapore</i> <b>Research Engineer</b> <i>Advanced Robotics Center, National University of Singapore</i> <b>Research Assistant</b> <i>State Key Laboratory of Robotics, Chinese Academy of Science, China</i> <b>Engineering Intern</b> <i>DJI, Shenzhen, China</i>	Mar. 2018 — present Mar. 2017 — Mar. 2018 Sep. 2014 — Jan. 2017 Jul. 2014 — Aug. 2014
RELEVANT PROJECTS	<b>Dog-Drone Project</b> <i>Intelligent Unmanned System Group, Temasek Laboratories, National University of Singapore</i> Immobilize suspicious individuals in an indoor environment by flying multiple drones aggressively around them. <ul style="list-style-type: none"><li>• Indoor localization with visual inertial odometry;</li><li>• Trajectories generation with Reflexxes;</li><li>• Tasks management with a state machine.</li></ul> <b>GPS-Denied Vision Control of UAV</b> <i>Advanced Robotics Centre, National University of Singapore, Singapore</i> Autonomous launch, tracking and landing of UAV on a moving platform under GPS-Denied environment. <ul style="list-style-type: none"><li>• Visual detection of designed markers;</li><li>• Software design and implementation;</li><li>• System integration.</li></ul> <b>Unmanned Ground Systems Challenge</b> <i>Autonomous Robot Group, State Key Laboratory of Robotics, CAS, China</i> Environment map building and localization under GPS signal lost situation. <ul style="list-style-type: none"><li>• Integrated 64-line, 32-line, single-line laser data and vision for obstacle detection, built obstacle layer environment map information;</li><li>• Integrated laser and vision data, and added vision color information to the laser point cloud for segmentation;</li><li>• Implemented laser odometry methods to achieve the UGV localization without GPS.</li></ul> <b>Research on VIO-based localization algorithms</b> <i>Northeastern University, China</i> Localization algorithm research based on the integration of visual, inertial and magnetic data. Algorithms include vision odometry, inertial navigation and sensor fusion. <ul style="list-style-type: none"><li>• Integrated the IMU and magnetic data with an error state Kalman filter to obtain attitude estimation;</li><li>• Implemented visual odometry based on the feature method;</li></ul>	Mar. 2018 — Jun. 2018 Mar. 2017 — Jan. 2018 Apr. 2016 — Sep 2016 Dec. 2015 — Oct. 2016

- Pose estimation obtained with vision and IMU integration via a multi-state Kalman filter simulation.

**The 3rd International UAV Innovation Grand Prix** Dec. 2015 — Oct. 2016  
*Autonomous Robot Group, State Key Laboratory of Robotics, CAS, China*

Supervised the visual guidance program development.

- Achieved the detection and recognition of ellipses and 2D binary code markers;
- Achieved the acquisition of relative pose between mobile markers and the aircraft;
- Used the Pixhawk autopilot to control the UAV with visual information.

**UAV GCS for Agriculture Irrigation** October. 2014 — Jan. 2015  
*Autonomous Robot Group, State Key Laboratory of Robotics, CAS, China*

Designed a UAV ground station software for agriculture irrigation with functions such as information monitoring, parameter setup and sensor calibration.

**DJI Internship** Jul. 2014 — Aug. 2014  
*DJI, Shenzhen, China*

Designed and conducted a series of reliability testing for MEMS IMUs applied to vibrating, extreme working temperature and strong electromagnetic interference environments.

PUBLICATIONS **Development of nano UAV platform for navigation in gps-denied environment using snapdragon.** Yu Zhou, Geng Qin, Feng Lin. IEEE IECON 2018.

**Decentralized robust exact tracking control for 2-DOF planar robot manipulator.** Zhenxing Sun, Yu Zhou, Xinghua Zhang, Haoyong Yu. IEEE ICARM 2018.

**Visual Target Detection and Tracking Framework Using Deep Convolutional Neural Networks for Micro Aerial Vehicles.** Mingjie Lao, Xudong Chen, Feng Lin, Geng Qin, Wenqi Liu, Yu Zhou. IEEE ICCA 2018.

**A robust real-time vision based GPS-denied navigation system of UAV.** Liying Yang, Bin Xiao, Yu Zhou, Yuqing He, Hongzhi Zhang, Jianda Han. IEEE CYBER 2016.

HONORS & ACTIVITIES	<b>The 3rd International UAV Innovation Grand Prix</b> — <i>2st prize</i>	Oct. 2015
	<b>Northeastern University Scholarship</b> — <i>1st prize</i>	Sep. 2015
	<b>Outstanding Graduates</b>	Jun. 2014
	<b>Outstanding Bachelor Paper Award</b>	Jun. 2014
	<b>National Undergraduate Electronic Design Contest</b> — <i>2nd prize</i>	Oct. 2013
	<b>Northeastern University Scholarship</b> — <i>1st prize</i>	2010-2013

SKILLS **Languages:** C++/C, MATLAB, Python.  
**Frameworks/Libraries/Tools:** ROS, OpenCV, PCL, TensorFlow, Qt, Linux, Git, CMake.  
**Sensors:** Vision, IMU, LASER, LIDAR.

LANGUAGES Mandarin (native); English (full professional proficiency).