

# Yijun Yuan

✉ yuanwj@shanghaitech.edu.cn

📍 School of Information Science and Technology  
ShanghaiTech University  
393 Huaxiazhong Road,  
Shanghai 201210, China.

🌐 <https://jarrome.github.io>

🌐 <https://robotics.shanghaitech.edu.cn/people/yuanyj>

🌐 <https://www.linkedin.com/in/yijun-yuan-4bba89131/>



## Education

- Sept. 2018 – Present    ■ **M.E., Computer Science and Technology, School of Information Science and Technology, ShanghaiTech University, China.**  
*Advisor: Sören schwertfeger*
- Sept. 2014 – Jun. 2018    ■ **B.E., Computer Science and Technology, School of Information Science and Technology, ShanghaiTech University, China.**

## Visiting

- Oct. 2019 - Dec. 2019    ■ **Andreas Nüchter's Group, Julius Maximilian University of Würzburg.**

## Employment

- Feb. 2019 – May. 2019    ■ **Computer Vision Engineer Intern, Nullmax Inc.**

## Experience





### Teaching

- Spring 2018    ■ **Teaching Assistant, Computer Architecture I.**
- Spring 2020    ■ **Teaching Assistant, Computer Architecture I.**

### Research

- Fall 2016 - Aug. 2017    ■ **Computer Vision** (1. Coarse-to-fine Retina Vessel Segmentation via Deep Neural Network ([report](#)), 2. Crowd Counting ([report](#))).
- Sept. 2017 - Aug. 2018    ■ **Mapping, Robotics** (1. Automatic Generation of Hierarchical Area Topology Representations from 2D Grid Maps (Bachelor's Thesis), 2. Fast Gaussian Process Occupancy Mapping (ICARCV2018, [paper&code](#)), 3. Incrementally building topology graphs via distance maps (RCAR2019, [paper&code](#)), 4. Topological Area Graph Generation and its Application to Path Planning (ICAR2019, [paper&code](#)).)
- May. 2018 - Nov. 2018    ■ **Machine Learning** (1. Deep Kernel Learning with Randomized Sketches ([report](#)), 2. CBCT Calibration).
- Oct. 2018 - Jan. 2019    ■ **Robot Arm** (Use RL/IL on Arms with Vrep simulator and openAI RL baseline ).






## Experience (continued)

- Feb. 2019 - May. 2019     **Computer Vision** (FCN-based Descriptor for Planar Object Tracking)
- Feb. 2019 - present     **Planning, Rescue Robotics** (1. Configuration-Space Flipper Planning for Rescue Robots (SSRR2019, [paper&code](#)); 2. Configuration-space flipper planning on 3D terrains ([preprint](#));)
- Oct. 2019 - Nov. 2019     **Localization, Rescue Robotics** (Improved VI-localization)
- May. 2019 - Mar. 2020     **3D Vision** (1. One-step Point Set Registration([preprint](#)); 2. Self-supervised local descriptor. ([preprint](#)))

## Research Publications

- 1 Yuan, Y., Xu, Q. & Schwertfeger, S. (2019). Configuration-space flipper planning on 3d terrain. *arXiv preprint arXiv:1909.07612*.
- 2 Yuan, Y., Borrmann, D., Nüchter, A. & Schwertfeger, S. (2020). Non-iterative one-step solution for point set registration problem on pose estimation without correspondence. *arXiv preprint arXiv:2003.00457*.
- 3 Yuan, Y., Hou, J., Nüchter, A. & Schwertfeger, S. (2020). Self-supervised point set local descriptors for point cloud registration. *arXiv preprint arXiv:2003.05199*.
- 4 Long, X., Xu, Q., Yuan, Y., He, Z. & Schwertfeger, S. (2020). Improved visual-inertial localization for low-cost rescue robots. In *2020 21st ifac world congress (ifac wc)* (to be published).
- 5 Hou, J., Yuan, Y. & Schwertfeger, S. (2019). Area graph: Generation of topological maps using the voronoi diagram. In *2019 ieee international conference on advanced robotics (icar)* (pp. 509–515). IEEE.
- 6 Yuan, Y., Wang, L. & Schwertfeger, S. (2019). Configuration-space flipper planning for rescue robots. In *2019 ieee international symposium on safety, security, and rescue robotics (ssrr)* (pp. 36–42). IEEE.
- 7 Yuan, Y. & Schwertfeger, S. (2019). Incrementally building topology graphs via distance maps. In *2019 ieee international conference on real-time computing and robotics (rcar)* (to be published). IEEE.
- 8 Yuan, Y., Kuang, H. & Schwertfeger, S. (2018). Fast gaussian process occupancy maps. In *2018 15th international conference on control, automation, robotics and vision (icarcv)* (pp. 1502–1507). IEEE.

## Awards

- 2016     **Dean's Scholarship** ShanghaiTech University.
- 2017     **Excellent Scholarship**, ShanghaiTech University.
- 2018     **Fan's Favorite Prize, NO.4 in total score, Best on HPCG and Tensorflow**, ISC 2018 high performance competition, Frankfurt, Germany.
- 2019     **DAAD-Short Term Scholarship**, German Academic Exchange Service.
-  **Honorary Title of Outstanding Student**, ShanghaiTech University.

## Skills

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Professional skills	📌 Robotics, Computer Vision (traditional and DL), Kernel Learning
Programming	📌 Python, C ++ , C, MATLAB, R, Rust
Software	📌 ROS, Gym, 3DTK, PCL
Simulator	📌 Vrep
Framework	📌 Tensorflow, Pytorch
Language	📌 English (fluent), Chinese (native)