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.

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.** Slef-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

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)