ZHIJIE YANG

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EDUCATION

Technical University of Munich October 2020 - Present
M.Sc. in Computer Science (Informatik)
Department of Informatics (Fakultät für Informatik) Grade: 1.9

ShanghaiTech University August 2017 - July 2020
B.Eng. in Computer Science and Technology
School of Information Science and Technology

ShanghaiTech University August 2016 - July 2017
B.S. in Bioscience
School of Life Science and Technology

RESEARCH PROJECTS

Towards Generation and Evaluation of Comprehensive Mapping Robot Datasets[1][2]
This project consists of building an autonomous robot system with various heterogeneous sensors to precept the surroundings and generating datasets for SLAM algorithm benchmarks and experiments. Supervisor: Prof. Dr. Sören Schwertfeger [i].

Mapping with Reflection – Detection and Utilization of Reflection in 3D Lidar Scans[4]
This project aimed at detecting the reflecting surfaces with 3D Lidar and used it to map the backside of objects. Supervisor: Prof. Dr. Sören Schwertfeger [i].

3D Object Detection with a Self-supervised Lidar Scene Flow Backbone[3]
This project uses scene-flow estimation as pre-text task to train the 3D objection detection network with self-supervision. Advisor: Emec Ercelik M.Sc. [ii]; Supervisor: Prof. Dr.-Ing. Alois Knoll. [iii]

Self-supervised Backbone Embedding Training
This project aims at training backbones of deep neural networks in a fully self-supervised way using techniques from embedding training and dimension reduction. Advisor: Emec Ercelik M.Sc. [ii], Dr. Ekim Yurtsever [iv]; Supervisor: Prof. Dr.-Ing. Alois Knoll. [iii]

TECHNICAL STRENGTHS

Modeling and Analysis: SOLIDWORKS
Programming Languages: C, C++, Python, MATLAB, RISC-V and Heidenhain
Machine Learning Tools: PyTorch, PyTorch Lightning, NumPy, SciPy, TensorFlow
Systems: Robot Operating System (ROS) and Linux

WORK EXPERIENCE

School of Information Science and Technology
Research assistant August 2020 - January 2021
Teaching assistant for Computer Architecture I January 2019 - June 2019

[i] https://robotics.shanghaitech.edu.cn/people/soeren
[ii] https://www.in.tum.de/i06/people/emec-ercelik-msc/
[iii] https://www.in.tum.de/i06/people/prof-dr-ing-habil-alois-knoll/
[iv] https://people.engineering.osu.edu/people/yurtsever.2

Teaching assistant for Operating System I September 2019 - January 2020
Teaching assistant for Intro. to Information Science and Technology B February 2020 - July 2020

Stereye Co., Ltd. April 2019 - January 2021
Internship as R&D engineer for sensor drivers in ROS (Python and C++).

SenseTime March 2021 - September 2021
Autonomous driving system research intern. DevOps (Dev: Python and C++; Ops: Docker, Jenkins, etc.) for ROS-based test platform middle-ware.

Shanghai AI Lab September 2021 - May 2022
Computer vision research intern for dataset evaluation.

TUM School of Management August 2022 - Present
Working student on project MILAS. Routing algorithms for autonomous e-shuttle service.

Cartken Inc. November 2022 - April 2023
TUM interdisciplinary project (IDP). Deep learning based robot localization algorithms.

AWARDS

RoboCup Rescue China
· The third prize. April 2018
· The first prize. April 2019

Challenge Cup Shanghai Final
· The first prize. May 2019

Merit Student of Academic Year 2017-2018 November 2018
Merit Student of Academic Year 2018-2019 November 2019

LANGUAGES

Chinese Mandarin Native Speaker
English Proficient Speaker
· TOEFL: 102, Reading 27, Listening 28, Speaking 23, Writing 24 as of June 2019
· GRE: 322, Verbal 155, Quantitative 167, Writing 3.5 as of November 2019

German B2

Publications

[1] Hongyu Chen et al. "Advanced mapping robot and high-resolution dataset". In: *Robotics and Autonomous Systems* (2020), p. 103559. ISSN: 0921-8890. DOI: https://doi.org/10.1016/j.robot.2020.103559. URL: http://www.sciencedirect.com/science/article/pii/S0921889020303997.

[2] Hongyu Chen et al. *Towards Generation and Evaluation of Comprehensive Mapping Robot Datasets*. In Workshop on Dataset Generation and Benchmarking of SLAM Algorithms for Robotics and VR/AR, 2019 IEEE International Conference on Robotics and Automation (ICRA). 2019. arXiv: 1905.09483 [cs.RO]. URL: https://arxiv.org/abs/1905.09483.

[3] Emeç Erçelik et al. "3d object detection with a self-supervised lidar scene flow backbone". In: *Computer Vision–ECCV 2022: 17th European Conference, Tel Aviv, Israel, October 23–27, 2022, Proceedings, Part X*. Springer. 2022, pp. 247–265.

[4] Xiting Zhao, Zhijie Yang, and Sören Schwertfeger. "Mapping with Reflection - Detection and Utilization of Reflection in 3D Lidar Scans". In: *2020 IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR)*. 2020, pp. 27–33. DOI: 10.1109/SSRR50563.2020.9292595.