YUHONG DENG

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EDUCATION

Department of Computer Science, National University of Singapore — Singapore,
Ph.D. in Computer Science — Aug. 2023 – present
Advisor: Prof. David Hsu

Tsinghua Shenzhen International Graduate School, Tsinghua University — Shenzhen, China
Master of Engineering in Artificial Intelligence — Aug. 2020 – Jul. 2023
- GPA: 3.85/4.00
- Selected Courses: Artificial Neural Network (A, top 5%), Introduction to Statistical Learning Theory (A, top 5%), Introduction to Probability theory (A-)

Thesis Title: Learning precise and dexterous manipulation of deformable objects (Outstanding Master's Thesis)
Advisor: Prof. Xueqian Wang

Department of Mechanical Engineering, Tsinghua University — Beijing, China
Bachelor of Engineering in Mechanical Engineering — Aug. 2016 – Jul. 2020
- GPA: 3.52/4.00
- Selected Courses: Programming Fundamentals (A-), System Dynamic and Control (A-), Students Research Training (A+, Honor Level)

Thesis Title: Cable identification system based on feature matching (Outstanding Bachelor's Thesis Candidate)

AWARDS

Outstanding graduate (Top 2% of all students), Tsinghua University	Aug. 2023
Outstanding Master's Thesis (Top 5% of all students), Tsinghua University	Aug. 2023
Comprehensive Scholarship (Top 5% of all students), Tsinghua University	Oct. 2022
Academic Rising Star Nominee Award (Top 0.5% of all students), Tsinghua University	Apr. 2021
Scholarship of Technology Innovation, Tsinghua University	Nov. 2019
Scholarship of Academic Performance, Tsinghua University	Nov. 2019
The First Prize in the 37th Challenge Cup (Top 1% of all students), Tsinghua University	Oct. 2019
The First Prize of Robotic Innovation Competition, Chinese Association for Artificial Intelligence	Oct. 2018

PUBLICATIONS

Journals

[1] **Y.H. Deng**, X.Q. Wang and L.P. Chen. Learning visual-based deformable object rearrangement with local graph neural networks, Complex & Intelligent Systems, 1-14. (DOI: 10.1007/s40747-023-01048-w)

[2] H.P. Liu, **Y.H. Deng**, D. Guo, B. Fang, F.C. Sun and W. Yang. An Interactive Perception Method for Warehouse Automation in Smart Cities, IEEE Transactions on Industrial Informatics, 17(2), 830-838. (DOI: 10.1109/tii.2020.2969680)

Conference

[3] **Y.H. Deng**, C.K. Xia, X.Q. Wang and L.P. Chen. Deep Reinforcement Learning Based on Local GNN for Goal-Conditioned Deformable Object Rearranging, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022. (DOI: 10.1109/iros47612.2022.9981669)

[4] **Y.H. Deng**, C.K. Xia, X.Q. Wang and L.P. Chen. Graph-Transporter: A Graph-based Learning Method for Goal-Conditioned Deformable Object Rearranging Task, IEEE International Conference on Systems, Man and Cybernetics (SMC), 2022. (DOI: 10.1109/smc53654.2022.9945180)

[5] **Y.H. Deng**, D. Guo, X.F. Guo, N.F Zhang, H.P Liu, and F.C Sun. MQA: Answering the Question via Robotic Manipulation, Robotics: Science and System (RSS), 2021. (DOI: 10.15607/rss.2021.xvii.044)

[6] **Y.H. Deng**, X.F. Guo, Y.X. Wei, K. L, B. Fang, D. Guo, H.P Liu, and F.C Sun. Deep Reinforcement Learning for Robotic Pushing and Picking in Cluttered Environment, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2019, pp. 619-626. (DOI: 10.1109/IROS40897.2019.8967899)

RESEARCH INTERESTS

- Robotic perception, learning and control
- Robotic manipulation
- Embodied agents

RESEARCH EXPERIENCE

Research Intern, Shanghai AI Lab   Shenzhen, China
Advisor: Jiangmiao Pang, Research Scientist of Shanghai AI Lab   Jan. 2023 – Apr. 2023
Mobile manipulator system based on large language model
Research Intern, Tencent Robotics X Lab   Shenzhen, China
Advisor: Lipeng Chen, Researcher of Tencent Robotics X Lab   Jan. 2022 – Oct. 2022
Vision-Based Goal-Conditioned Rearrangement Tasks of Deformable Objects
Master Student, Tsinghua Artificial Intelligence and Robot Laboratory, Tsinghua University   Shenzhen, China
Advisor: Xueqian Wang, Professor of Automation, Tsinghua University   Sep. 2020 – Jul. 2023
Deformable object manipulation
Research Assistant, Department of Computer Science, Tsinghua University   Beijing, China
Advisor: Huaping Liu, Professor of Computer Science, Tsinghua University   Sep. 2017 – May. 2021
Intelligent Robotic Grasping in Cluttered Scene, Robot question answering via manipulation

Paper Reviewer
- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- IEEE Robotics and Automation Letters (RAL)

SKILLS

Programming Language: Proficient in Python, C++, Matlab
Design/ CAD: Proficient in Mechanical Design (Solidworks, AutoCAD)
Robotics Related: Proficient in Microcontroller (STM32, Arduino) and manipulators of UR series and ABB series; Frequent user of ROS, Pybullet, Mujoco and V-rep
Machine Learning Related: Frequent user of PyTorch and Tensorflow; Proficient in deep learning and reinforcement learning