KUN ZHANG

EDUCATION

- **Hong Kong University of Science and Technology**, Hong Kong SAR, China 2019.08-present
  Ph.D. Candidate in Electronic and Computer Engineering, **Robotics Institute**; *GPA:* 3.433/4
  Supervisors: Prof. Michael Yu WANG, Prof. Yiwen WANG
- **Southern University of Science and Technology**, Shen Zhen, China 2019.01-present
  Visiting Senior Scholar in College of Engineering
  Supervisor: Prof. Wei ZHANG
- **University of Macau**, Macau SAR, China 2016.09-2019.06
  M.S. in Electromechanical Engineering; *GPA:* 3.52/4
  State Key Laboratory of Internet of Things for Smart City
  Supervisor: Prof. Zhixin YANG
- **Harbin Engineering University**, Harbin, China 2012.08-2016.07
  B.E. in Mechanical Design, Manufacturing and Automation; *GPA:* 84.22/100
  Supervisor: Prof. Jinxing ZHENG

WORK EXPERIENCE

- Tencent Robotics-X Lab Control Center Intern 2021.05-2021.08
- Shenzhen Dorabot Company Robotics Software Intern 2019.08-2019.12
- Helper of the Office of Health, Safety and Environmental Affairs of UM 2016.10-2018.12
- Shenyang Airplane Industry (Group) Limited Company Intern 2016.03-2016.05
- Dalian Shipping Heavy Industry Group Company Intern 2015.07-2015.09
- Header of the Competition Sector of HEU Free-carbon Vehicle Association 2014.05-2016.05

SKILLS

- Programming Languages: Python == Matlab > C++
- 3D Design: Pro/E, Sharp3D, Blender
- Simulation: PyBullet,MuJoCo,Coppeliasim
- Platforms: Linux, LaTeX, ROS, OpenCV, Open3D
- Others: WordPress, VN, Microsoft Offices
- Languages: Mandarin(Native speaker), English(IELTS6), German(A2)， Cantonese(麻麻啪)

RESEARCH PROJECTS

- **Robotics Perception, Manipulation and Hardware Design** 2019.08-present
  ·***Deformable object manipulation: Cloth-like*** 2022.10-present
  ·***Design and test of a novel modular dexterous gripper*** 2022.10-2023.03
  ·***Peg-in-hole manipulation: USB,HDMI,RJ45*** 2021.10-2022.09
  ·***Joggling manipulation: Tossing*** 2021.05-2021.08
  ·***Design and test of a novel mobile manipulator*** 2021.01-2021.05
  ·***Nonprehensile manipulation: Ball balancing*** 2020.07-2020.10
  ·***Design and test of a novel modular force control manipulator*** 2020.02-2020.07
  ·***Grasp manipulation:Best grasp point and self collision detection*** 2019.08-2019.12

- **Machine Tools Recognition System** 2016.10-2018.10
  based on ELM-embedded deep learning

- **Intelligent Energy-saving Automatic Closing Device for Refrigerators** 2014.10–2015.05
  (Principal) National innovation and entrepreneurship training program for college students.

PUBLICATIONS

[1] Zhiming Chen*, **Kun Zhang***, Hua Chen, Michael Yu Wang, Wei Zhang, Hongyu Yu, "DORF: A Dynamic Object Removal Framework for Robust Static LiDAR Mapping in Urban Environments", Submitted to *IEEE Robotics and Automation Letters (RAL)*

[2] **Kun Zhang**, Yuanhang Yang, Zhiming Chen, Hua Chen, Michael Yu Wang, Wei Zhang,"A Modular End Effector with Active Rolling Fingertip for Picking Cloth-like Objects", to appear in Proceedings *IEEE International Conference on Automation Science and Engineering (CASE),2023*

[3] Chen Wang, Haoxiang Luo, **Kun Zhang**, Hua Chen, Jia Pan, Wei Zhang,"POMDP-Guided Active Force-Based Search for Robotic Insertion ", to appear in Proceedings *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),2023*

[4] Lipeng Chen, Weifeng Lu, **Kun Zhang**, Yizheng Zhang, Longfei Zhao, and Yu Zheng,"TossNet: Learning to Accurately Measure and Predict Robot Throwing of Arbitrary Objects with Proprioceptive Sensing", submitted to *IEEE Transactions on Robotics (T-RO)*

[5] **Kun Zhang**, Chen Wang, Hua Chen, Jia Pan, Michael Yu Wang, and Wei Zhang, "Vision-based Six-Dimensional Peg-in-Hole for Practical Connector Insertion", to appear in Proceedings *IEEE International Conference on Robotics and Automation (ICRA), 2023*.

[6] Luo, Luqing, Zhi-Xin Yang, Lulu Tang, and **Kun Zhang**. "An ELM-embedded deep learning based intelligent recognition system for computer numeric control machine tools." IEEE Access 8 (2020): 24616-24629.

[7] Wang, Xian-Bo, Pu Miao, **Kun Zhang**, Xiaoyuan Zhang, and Jun Wang. "Study on novel signal processing and simultaneous-fault diagnostic method for wind turbine." Transactions of the Institute of Measurement and Control 41, no. 14 (2019): 4100-4113.

[8] Yang, Zhi-Xin, Lulu Tang, **Kun Zhang**, and Pak Kin Wong. "Multi-view CNN feature aggregation with ELM auto-encoder for 3D shape recognition." Cognitive Computation 10, no. 6 (2018): 908-921.

[9] **Zhang. K.** Tang, L.L. Yang. Z.X.* Luo, L.Q. , "Intelligent Machine Tools Recognition Based on Hybrid CNNs and ELMs Networks.", to appear in Proceedings *International Conference on Extreme Learning Machine(ELM),2018.* Singapore. Nov 21-23, 2018. (**Oral**)

[10] 郭清, **张坤**, 祝海波, 孙蓉, 离心式控速闭门装置 [P]. CN Patent CN105,332,583 B. & CN Patent CN205,206,567 U

[11] 郭清, **张坤**, 祝海波, 基于 TRIZ 理论的安全节能闭门装置创新设计 [J]. 科技资讯, 2015, 1(12): 2-2.

ACADEMIC SERVICES

Reviewer for following conferences and journals:

- IEEE International Conference on Robotics and Automation(ICRA) (2021 , 2023)
- Journal of Healthcare Engineering(2022)

Teaching Assistant:

- HKUST ELEC1100 Introduction to Electro-Robot Design 2021 Fall
- HKUST ELEC1030 The Rise of Autonomous Robots 2019 Spring
- UM Undergraduate Final Year Project: Structure design of 3D printer 2017
- UM EMEB221 Computer-Aided Design 2017 Spring,2018 Spring
- UM EMEB350 Advanced Manufacturing 2017 Spring
- UM EMEB312 Control Engineering 2016 Fall

HONORS AND AWARDS

- **Visiting Fellowship of SUSTech** 2023-2024
- **Postgraduate Scholarship of HKUST** 2019-2023
- **Postgraduate Scholarship of Macau Government (CTABE)** 2016-2019

- **Student scholarship of HEU** 2012-2016
- ***2nd Prize***, Award on the 4th Method of TRIZ, college innovation competition 2016.05
- ***2nd Prize***, Award on the Heilongjiang college engineering ability competition 2015.12
- ***1st Prize***, Award on the 3rd HEU college engineering ability competition 2014.12
- ***3rd Prize***, Award on the 2nd HEU physical instrument innovation design competition 2014.10
- ***3rd Prize***, Award on the 19th HEU "54 Cup" college technology innovation competition 2013.10
- ***1st Prize***, Award on the 4th HEU "Sailing Cup" college technology innovation competition 2012.11
- **Academic Proof of APS** (Akademische Prüfstelle Kulturreferat der Deutschen Botschaft Peking) 2015.11
- **Outstanding volunteer**, Award on the 7th International College Snow Sculpture competition 2015.12
- **Outstanding volunteer**, Award on the 3rd Method of TRIZ, college innovation competition 2014.05