Fei MENG

Rm. 432, SHB, The Chinese University of Hong Kong, Shatin, Hong Kong
Tel: +86 17727415337 | Email: feimeng@link.cuhk.edu.hk | HomePage: https://feimeng93.github.io/

Education

- **Ph.D. Student, The Chinese University of Hong Kong** **08/2020 – Present**
  Supervisor: Prof. Max Qinghu MENG, Dept. of Electronic Engineering
- **M.Eng., Harbin Institute of Technology** **09/2017 – 07/2019**
  Supervisor: Prof. Guangfu MA, Dept. of Control Science and Engineering, School of Astronautics
- **B.Eng., Harbin Institute of Technology** **08/2012 – 07/2016**
  Dept. of Electrical Engineering and Automation, School of Information & Electrical Engineering

Research Interest

Robot Safety, Learning-based Methods, Motion Planning, Data-Driven Control

Publications

- **NR-RRT: Neural Risk-Aware Near-Optimal Path Planning in Uncertain Nonconvex Environments**
  F. MENG, L. CHEN, H. MA, J. WANG*, Max Q.-H. MENG*
  IEEE Transactions on Automation Science and Engineering, 2022
- **Learning-based Risk-Bounded Path Planning Under Environmental Uncertainty**
  F. MENG, L. CHEN, H. MA, J. WANG*, Max Q.-H. MENG*
  IEEE Transactions on Automation Science and Engineering (Under Review)
- **Bi-Risk-RRT Based Efficient Motion Planning for Mobile Robots**
  H. MA, **F. MENG**, J. WANG*, Max Q.-H. MENG*
  IEEE Transactions on Intelligent Vehicles, 2022
- **Hierarchical Policy for Non-prehensile Multi-object Rearrangement with Deep Reinforcement Learning and Monte Carlo Tree Search**
  F. BAI, **F. MENG**, J. LIU, J. WANG, Max Q.-H. MENG*
  Biomimetic Intelligence and Robotics, 2022
- **An HVAC Control Approach via Combining Model-based Deep Reinforcement Learning and Model Predictive Control**
  L. CHEN, **F. MENG**, Y. ZHANG*
  IEEE Internet of Things Journal, 2022
- **Relevant Region Sampling Strategy with Adaptive Heuristic Estimation for Asymptotically Optimal Motion Planning**
  C. LI, **F. MENG**, J. WANG*, Max Q.-H. MENG*
  arXiv preprint arXiv:2111.00383, 2021
- **A Survey of Learning-based Robot Motion Planning**
  J. WANG, T. ZHANG, N. MA, H. MA, **F. MENG**, Max Q.-H. MENG*
  IET Cyber-Systems and Robotics, 2021
- **Reciprocally Rotating Magnetic Actuation and Automatic Trajectory Following for Wireless Capsule Endoscopy**
  Y. XU, K. LI, Z. ZHAO, **F. MENG**, Max Q.-H. MENG*
  2021 IEEE International Conference on Robotics and Automation (ICRA)
- **A Nonuniform Sampling Strategy for Path Planning Using Heuristic-based Certificate Set**
  H. MA, J. LIU, **F. MENG**, J. PAN, J. WANG*, Max Q.-H. MENG*
  2021 IEEE International Conference on Robotics and Biomimetics (ROBIO)
- **A Model-free Adaptive Controller for Biomimetic Pneumatically Actuated Continuum Manipulators**
  F. MENG, Y. Lyu, G. MA, Y. ZHU
  2018 IEEE International Conference on Robotics and Biomimetics (ROBIO).

Work Experience

- **Intern, 2012 Lab, Huawei Technologies Co. Ltd., Shenzhen** 04/2021 – 09/2021
  Mentor: Dr. Chen Chen
- **Junior Research Assistant, RPAI Lab, The Chinese University of Hong Kong, HK** 07/2019 – 07/2020
  Supervisor: Prof. Max Qinghu MENG

Research Experience

- **Member Midstream Research Programme for University from ITC of HK SAR** 07/2019 – 12/2021
  Development of a Robotic Rollator-orthosis System for Mobility Augmentation and Eldercare
- **Member Crosswise Task from China Academy of Space Technology** 09/2017 – 07/2019
  Design & Implementation of Control System for Pneumatically Actuated Continuum Manipulator

Honors & Awards

- **Outstanding Student of Heilongjiang Province, China (top 1%)** 2018 – 2019
  Highest award for students in Heilongjiang Province
- **China Electronics Technology Group Corporation Glarun Scholarship (2/1223)** 2018 – 2019
  Scholarship for only one Ph.D. student out of all postgraduates of School of Astronautics
- **Outstanding Graduates of Harbin Institute of Technology (top 10%)** 2018 – 2019
  Award for graduates with overall outstanding performance
- **First-class Academic Postgraduate Students Scholarship of Harbin Institute of Technology** 2018 – 2019
  Scholarship for postgraduates with distinguished academic performance
- **Outstanding Student of Harbin Institute of Technology (top 4%)** 2017 – 2018
  Award for students with overall outstanding performance
- **Top Ten Student Leaders of Harbin Institute of Technology** 2014 – 2015
  Highest Award for all undergraduate student leaders of HIT
- **Second Prize – Provincial Robot Competition** 2013 – 2014
  Award for winners on bipedal-robot racing
- **Second Prize –National "Freescale Cup" Intelligent Car Race for Undergraduates** 2012 – 2013
  Award for winners on two-wheeled upright robotic vehicle racing

Academic Service

- **Journal Reviewer**
  IEEE Robotics and Automation Letters, IEEE Internet of Things Journal, IEEE Transactions on Automation Science and Engineering, IEEE Transactions on Systems, Man, and Cybernetics: Systems.
- **Conference Reviewer** IEEE International Conference on Robotics and Automation, IEEE International Conference on Robotics and Biomimetics, IEEE International Conference on Information and Automation.
- **Conference Chair**
  - Session chair of IEEE International Conference on Robotics and Automation, 2021
- **Teaching Assistant**
  Introduction to Electric Power Systems (ELEG3601) for Undergraduates, Spring 2021 CUHK. Fundamentals of Electric Circuits (ELEG2202A) for Undergraduates, Fall 2020/21/22, CUHK.

Skills

- **Programming skills:** C/C++, Python, MATLAB/Simulink, Maple, Julia, R. **Robotic Software:** ROS, Gazebo, MoveIt, Vrep, Pybullet. **Languages:** Mandarin (Native), English (Fluent). **Sports:** Basketball, Badminton.