Fei MENG

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Education

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

Research Interest

Robotic Motion Planning, Learning-based Methods, Data-Driven Control

Publications

- **RAMPAGE: Towards Whole-body, Real-Time and Agile Motion Planning in Unknown Cluttered Environments for Mobile Manipulators**
  Y. YANG, **F. MENG**, Z. MENG, C. YANG*
  IEEE Transactions on Industrial Electronics, 2024
- **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, 2023 (with 2024 IEEE ICRA)
- **Relevant Region Sampling Strategy with Adaptive Heuristic for Asymptotically Optimal Path Planning**
  C. LI, **F. MENG**, H. MA, J. WANG*, Max Q.-H. MENG*
  Biomimetic Intelligence and Robotics, 2023
- **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 (with 2023 IEEE CASE)
- **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
- **Fast Human-in-the-loop Control for HVAC Systems via Meta-learning and Model-based Offline Reinforcement Learning**
  L. CHEN, **F. MENG**, Y. ZHANG*
  IEEE Transactions on Sustainable Computing, 2023
- **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
- **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 (The IET Premium Awards)
- **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

- **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** **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

Academic Service

- **Journal Reviewer**
  IEEE RAL, IEEE T-II, IEEE IoT, IEEE T-ASE, IEEE T-SMC.
- **Conference Reviewer** 2022/2024 IEEE ICRA , 2021 IEEE ROBIO.
- **Conference Chair**
  - Session chair of 2021 IEEE ICRA
- **Teaching Assistant**
  Introduction to Electric Power Systems (ELEG3601) for Undergraduates, Spring 2021 CUHK. Fundamentals of Electric Circuits (ELEG2202A) for Undergraduates, Fall 2020/21/22/23, 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.