Fei MENG

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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

- **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

- **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

- **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 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 Transactions on Industrial Informatics, 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.