Fei MENG

Rm. 432, SHB, The Chinese University of Hong Kong, Shatin, Hong Kong SAR, China
Tel:+852 95034341 | Email:feimeng@link.cuhk.edu.hk | HomePage: www.ee.cuhk.edu.hk//∼fmeng

Education

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

Research Interest

Learning-based Motion Planning, Data-driven Control

Publications & Patent

Journal 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*
  (Under Review) IEEE Transactions on Automation Science and Engineering (IEEE T-ASE)
- **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 (IEEE IoT)
- **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 (IEEE T-IV)
- **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)
- **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*
  (Under Review) Biomimetic Intelligence and Robotics
- **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

Conference Publications

- **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).
- **A Model-based Sliding-mode Tracking Controller for Pneumatic Muscle Actuated Continuum Arms**
  F.MENG, Y. Lyu, G. MA, Y. ZHU

2018 The Eighth International Conference on Instrumentation & Measurement, Computer, Communication and Control

Patent

- **CN109955234B: Shape Detecting System for Flexible Continuum Manipulator**
  Y. Lyu, S. Zou, **F. MENG**, J. QI, Y. GUO, G. MA
  06/15/2021, Hei Longjiang Province, China.

Work Experience

- **Junior Research Assistant RPAI Lab, The Chinese University of Hong Kong, HK, China** **07/2019 – 07/2020**
  Supervisor: Prof. Max Qinghu MENG

Research Experience

- **Member Midstream Research Programme for University, ITC, HK** **07/2019 – 12/2020**
  Development of a Robotic Rollator-orthosis System for Mobility Augmentation and Eldercare
- **Member Crosswise Task from China Academy of Space Technology, China** **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 1 Master and 1 PhD student out of all postgraduates of School of Astronautics
- **Outstanding Graduates of Harbin Institute of Technology (top 10%)** **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 Leader of Harbin Institute of Technology** **2014 – 2015**
  Highest Award for 10 individuals out of all student leads of HIT
- **Second Prize – Shandong Robot Competition** **2013 – 2014**
  Award for winners on bipedal-robot racing
- **Third-class of Undergraduate Scholarship of Harbin Institute of Technology** **2013 – 2014**
  Scholarship for undergraduates with good academic performance
- **Provincial Second Prize – National 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 RA-L)
  - IEEE Transactions on Automation Science and Engineering (IEEE T-ASE)
  - IEEE Transactions on Systems, Man, and Cybernetics: Systems (IEEE SMC)
- **Conference Reviewer**
  - IEEE International Conference on Robotics and Automation (ICRA)
  - IEEE International Conference on Robotics and Biomimetics (ROBIO)
- **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, HK, China
  - Fundamentals of Electric Circuits (ELEG2202A) for Undergraduates. Fall 2020/21, CUHK, HK, China

Skills

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