Lingzhi Kong

Boston, MA, 02115

📞 857-869-0474   ✉ kong.ling@northeastern.edu   🏠 ling-k.github.io

EDUCATION

Northeastern University   Sep. 2019 – present
Master of Science in Robotics - Computer Science   *Boston, MA*

Northeastern University   Sep. 2015 – Jan. 2018
Master of Engineering in Control Engineering   *Shenyang, China*

Inner Mongolia University of Technology   Sep. 2010 – July 2014
Bachelor of Engineering in Power Engineering   *Huhhot, China*

RELEVANT COURSEWORK

- Machine Learning
- Reinforcement Learning
- Algorithms
- Optimization Theory
- Matrix Analysis
- System Identification
- Mobile Robotics

EXPERIENCE

Generalizable Robotics and Artificial Intelligence Lab   Sep. 2020 – present
Research Assistant   *Boston, MA*
- Conducted research on compositional generalization in object-oriented world models.
- Conducted research on Differentiable Equivariant Planning Networks.

Khoury College of Computer Sciences, Northeastern Univeristy   Sep. 2020 – Dec. 2020
Teaching Assistant, Course title: CS 5180 Reinforcement Learning and Decision Making   *Boston, MA*
- Hold office hours to provide guidance for students on their homework and course projects.

Shenyang Institute of Automation, Chinese Academy of Sciences   May 2016 – May 2017
Software Intern   *Shenyang, China*
- Developed the prototype of a surgical robot for bone surgery.

PROJECTS

Differentiable Equivariant Planning Networks   Oct. 2021 – present
- Proposed differentiable equivariant planning networks.
- Formulated the framework by injecting group symmetries to existing frameworks.
- Implemented two versions of the model and applied them to 2D navigation environments.

Compositional Generalization in Object-Oriented Environments   Jan. 2021 – present
- Implemented several versions of the model guided by our formulation.
- Conducted several baseline experiments to compare with our proposed framework.

Teaching an Artificial Agent to Play CarRacing Game | *deep RL, Data Aggregation*   Oct. 2019 – Dec. 2019
- Taught a computer to play the OpenAI gym CarRacing-v0 game.
- Applied Dataset Aggregation (DAGGER) algorithm to OpenAI gym.
- Demonstrated the efficacy of PPO and DAGGER in sequential decision-making problem.

Image-Guided Surgical Robot for Bone Tumor Resection | *Surgical Robot*   May 2016 – May 2017
- Developed the prototype of a surgical robot for bone surgery.
- Implemented the algorithms for 3D surgical path generation.
- Implemented the visualization module of the robot position and orientation using Visualization Toolkit.
- Implemented the registration algorithm to build the relationship between world space and image space.
- Conducted the isolated trial of bone resection and repair at hospital.

TECHNICAL AND PERSONAL SKILLS

Programming: *Proficient in* Python, MATLAB, Pytorch, Numpy; *some experience in* C++, ROS, Mongodb.
Tools and operating system: *Proficient in* Latex, Git, Linux.
Language: English (*Professional working proficiency*); Chinese (*native*); Mongolian (*daily conversation*).