JUNFENG LONG

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EDUCATION

ShanghaiTech University Shanghai, China

B.Eng. in Computer Science and Technology *Aug. 2019 - Jun. 2023*

Selected Coursework: Machine Learning(A+), Numerical Optimization(A+), Convex Optimization(A), Probability and Statistics II(A), Introduction to Stochastic Simulation Methods and its Application(A+), Mathematical Modeling(A)

RESEARCH INTRESTS

My research interest mainly falls on **Robotics**, **Reinforcement Learning**, **Optimization** and **Control**. I am particularly interested in the intersection of machine learning, control and optimization, and apply them to real robotic systems to achieve agile and robust robot locomotion, manipulation and interaction. I am also interested in achieving stylized human motion on real robot, learning and application of world models (dynamics models), and developing robot foundation models for general purpose robots.

RESEARCH EXPERIENCE

Hybrid Robotics Group, UC Berkeley Berkeley, CA
Visiting Scholar *Sep. 2024-Present*
Whole-Body-Control of Humanoid Robots *Advisor: Prof. Koushil Sreenath*

· Working on whole-body-control with task priority using reinforcement learning and constrained optimization.

Shanghai AI Laboratory Shanghai, China
Research Assistant Intern *Jan. 2023-Jul. 2024*
Adaptive Locomotion of Legged Robot *Advisor: Dr. Jiangmiao Pang*

· I worked on agile quadrupedal locomotion (Hybrid Internal Model, ICLR2024), robust quadrupedal locomotion (Learning H_∞ Locomotion Control, CoRL 2024) and humanoid locomotion (Perceptive Internal Model, LocoLearn Workshop at CoRL 2024). I also worked on model based reinforcement learning (Parallelizing Model-based Reinforcement Learning Over the Sequence Length, NeurIPS 2024).

Network Intelligence Center, ShanghaiTech University Shanghai, China
Undergraduate Research Assistant *Jul. 2021-Aug. 2022*
Optimality of Data Exchange in Edge Computing System *Advisor: Prof. Youlong Wu*

· We propose a novel coding scheme establishing an optimal information-theoretic trade-off between computation load and communication latency in MapReduce framework, published on IEEE Transactions on Communications.

HONORS

Best Poster Award *LocoLearn Workshop at CoRL 2024*
SIST Outstanding Teaching Assistant Award *ShanghaiTech University*
Outstanding Individual in Industry Practice *ShanghaiTech University*

PUBLICATIONS

1. **Junfeng Long***, Junli Ren*, Moji Shi*, Zirui Wang, Tao Huang, Ping Luo, and Jiangmiao Pang. "Learning Humanoid Locomotion with Perceptive Internal Model". **ICRA 2025**.
[Project Page] [Paper]

2. **Junfeng Long***, Wenye Yu*, Quanyi Li*, Zirui Wang, Dahua Lin and Jiangmiao Pang. "Learning H_∞ Locomotion Control". **CoRL 2024, Best Poster Award of LocoLearn Workshop**.
[Project Page] [Paper]

3. Junli Ren*, Yikai Liu*, Yingru Dai, **Junfeng Long**, Guijin Wang. "TOP-Nav: Legged Navigation Integrating Terrain, Obstacle and Proprioception Estimation". **CoRL 2024**.
[Project Page] [Paper]

4. Zirui Wang, Yue Deng, **Junfeng Long**, Yin Zhang. "Parallelizing Model-based Reinforcement Learning Over the Sequence Length". **NeurIPS 2024**.
[Paper]

5. **Junfeng Long***, Zirui Wang*, Quanyi Li, Liu Cao, Jiawei Gao and Jiangmiao Pang. "Hybrid Internal Model: Learning Agile Legged Locomotion with Simulated Robot Response". **ICLR 2024**.
[Project Page] [Paper]

6. Haoning Chen, **Junfeng Long**, Shuai Ma, Mingjian Tang and Youlong Wu. "On the Optimality of Data Exchange for Master-Aided Edge Computing Systems". **IEEE Transactions on Communications, 2023**.
[Paper]

7. **Junfeng Long**, "Globalization Techniques of Anderson Acceleration". **ShanghaiTech University Undergraduate Thesis, 2023**.

PREPRINTS

1. Hanqing Wang*, Jiahe Chen*, Wensi Huang*, Qingwei Ben*, Tai Wang*, Boyu Mi*, Tao Huang, Siheng Zhao, Yilun Chen, Sizhe Yang, Peizhou Cao, Wenye Yu, Zichao Ye, Jialun Li, **Junfeng Long**, ZiRui Wang, Huiling Wang, Ying Zhao, Zhongying Tu, Yu Qiao, Dahua Lin, Jiangmiao Pang. "GRUtopia: Dream General Robots in a City at Scale". **In Submission**.
[Video] [Paper]

TEACHING EXPERIENCE

Teaching Assistant of Machine Learning(Graduate Level) 2021Fall, ShanghaiTech University
Teaching Assistant of Probability and Statistics II 2022Fall, ShanghaiTech University

ACDEMIC SERVICES

Reviewer for: ICLR 2025, ICRA 2025.

SKILLS

C/C++, Python, PyTorch, IsaacGym/Sim, Mujoco, OpenMPI, ROS, MatLab