HAOSEN XING (RUSSELL)

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Education

Carnegie Mellon University (08/2017 – Current)
Master degree of Mechanical Engineering

University of California, Irvine (09/2013 – 12/2016)
B.S. Degree of Mechanical Engineering

Courses Highlighted

Engineering Optimization (24-785)
Machine Learning (10-601)
Deep Reinforcement Learning & Control (10-703)
Robot Dynamics and Analysis (24-760)
Statistical Techniques in Robotics (16-831)
Sensing & Sensors (16-722)
Kinematic, Dynamic and Control (16-711)
Engineering Computation (24-780)
Numerical Method in Engineering (16-831)
Lightweight Structure (ENGRMAE 157)

Skills

Design: SolidWorks, Rhino, Express PCB, OpenGL
Programming: Python, Pytorch, MATLAB, C++, Arduino
Tools: Mathematical Modeling, Engineering Optimization, Robot Dynamic Analysis, (Deep) Reinforcement Learning, Machine Learning, Finite Element Analysis, Microsoft Office Tools

Experience

Research Experience

Biorobotics Lab Oct 2017 – May 2019

Research on legged-system locomotion. Searching for the template that allows self-propelling systems to perform at the level of the living systems. Building low control targets to achieve "good" properties at locomotion, stability and energy, etc. Also, improving locomotion performance with inertia appendages and applying learning tools to find the better locomotion behavior.

Internship at International Design Institute of Zhejiang University April 2017 – June 2017

Self-designed (SolidWorks & Rhino) and manufactured the mechanical structure and control system of the lower-body fitting robot, which could help online-clothing-shoppers figure out how clothes fit them. The robot contains four platforms including waist, hip, thigh and calf. Each of them works individually.

Wind Tunnel Research March 2016 – May 2017

Set up the experiment about the decay of kinetic energy downstream with turbulence**.** Repaired galvanized wires. Repaired the wind tunnel. Fabricated sensors. Analyzed the power spectrum of down-stream decay.

Microgeneration Research March 2016 – December 2016

Researched on microgeneration and developed micro generators.

Atmospheric Pollution Modeling Study September 2016 – December 2016

Researched on computational mathematics and computational fluid dynamics, especially about shallow-water equations in storm surge modeling and coastal engineering.

Leadership, Honor and Activities

SAE Savage Team – Aero/Body Team Leader

- Modeled and fabricated the aerodynamic auto body to optimized performance

UCI Deans Honor List
Pi Tau Sigma Honor Society (Former Vice President in UCI)

Conferences Attended

American Physical Society 2019 – March 2019
Robotics: Science and Systems 2018 – June 2018
18th U.S. National Congress for Theoretical and Applied Mechanics – June 2018
American Physical Society 2018 – March 2018

Presentations and Papers

Baxi Chong*, Yasemin OZKAN-AYDIN, Guillaume Sartoretti, Jennifer Rieser, Chaohui Gong, Haosen Xing, Daniel Goldman, Howie Choset, **A Hierarchical Geometric Framework to Design Locomotive Gaits for Highly Articulated Robots.** Accepted by Robotics: Science and Systems, 2019.

Xing, H., Chong, B., Sartoretti, G., Whitman, J., Aydin, Y.O., Goldman, D., Choset, H., **Inertial Tail-like Appendage Use in Quadrupeds Improves Stability in Diagonal Sequence Walking Gaits.** American Physical Society, March Meeting, 2019.

Baxi Chong, Yasemin Ozkan aydin, Guillaume Sartoretti, Jennifer Rieser, Haosen Xing, Chaohui Gong, Howie Choset, Daniel Goldman, **Coordination of legs and body undulation during turning in quadruped locomotion.** American Physical Society, March Meeting, 2019.

Xing, H., Chong, B., Sartoretti, G., Goldman, D., Choset, H., **Tail Use in Quadruped Improves Static Stability in Diagonal Sequence Walking Gaits.** In Robotics: Science and Systems Workshop on ``Unusual Appendages", Pittsburgh, PA, June 2018.

Zhong, B., Aydin, Y.O., Gong, C., Sartoretti, G., Wu, Y., Rieser, J., Xing, H., Rankin, J., Michel, K., Nicieza, A. and Hutchinson, J., Goldman, D., Choset, H., **Coordination of back bending and leg movements for quadrupedal locomotion.** Robotics: Science and Systems, 2018.

Chong, B., Aydin, Y.O., Rieser, J., Wu, Y., Xing, H., Goldman, D., Choset, H., **The importance of body-limb coordination in a walking tetrapod.** In American Physical Society, March Meeting, 2018.