

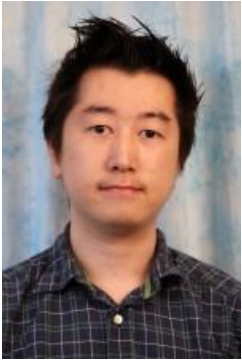
The Field Robotics Center

Seminar Series

Thursday, 5th May

NSH 1507 2:00 – 3:00pm

Food will be served



Zongyi Yang

M.S. Student
Robotics Institute

Robot Brachiation with Energy Control

Abstract: Branching structures are ubiquitous elements in several environments on Earth, from trees found in nature to man-made trusses and power lines. Being able to navigate such environments provides a difficult challenge to robots ill-equipped to handle the task. In nature, locomotion through such an environment is solved by apes through a process called brachiation, where movement is performed by hand-over-hand swinging.

This thesis outlines the development of a two-link Brachiating robot. We will present our work on implementing an Energy-based Controller where we inject or remove energy into the system before assuming the grasping posture. We will show that the controller can solve the ladder problem and swing-up for continuous contact brachiating gaits, and compare it to other control approaches in simulation. We will also show our work in developing a real-world brachiating robot, and show the implementation of our controller in this robot.

Speaker Bio: Zongyi Yang is a M.S. student in the Robotics Institute advised by David Wettergreen. He received a B.S. in Engineering Science ECE Option from University of Toronto in 2014. His current research focuses on robot brachiation.



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