Kazuya Otani

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EDUCATION

Carnegie Mellon University, School of Computer Science August 2016 – May 2018
M.S. Robotic Systems Development. GPA: 4.1/4.0

UC San Diego, Jacobs School of Engineering September 2012 – June 2016
B.S. Mechanical Engineering. GPA: 3.6/4.0

WORK EXPERIENCE

Mechanical Engineering Intern, Shield AI July 2015 – July 2016
Mechanical design/hardware integration of autonomous indoor exploration quadrotor.

- Initiated the design, fabrication, sensor integration, testing and verification of primary development platform
- Simulation-based optimization of quadrotor frame for robustness
- Implemented nonlinear adaptive attitude/position controller in Gazebo
- Design of experiments to characterize Lidar mirror rig, powertrain, other various components

Mechanical Engineering Intern, Microsoft June 2014 – September 2014

- Design and fabrication of test fixtures for stress tests
- Teardowns for mechanical testing and competitive analysis

RESEARCH EXPERIENCE

Robotics Research Intern, Inria May 2017 – November 2017
Research on QP-based humanoid robot control as part of an European Union H2020 project

- Developing algorithms for human-humanoid collaborative manipulation, motion retargeting
- Extended software frameworks for humanoid control with new QP formulations, performance optimizations, motion capture system interface, visualization tools
- Presented work at 2017 IEEE RAS International Conference on Humanoid Robots

Research Assistant, Bioinspired Robotics and Design Lab February 2015 – January 2016
Research and design of soft robot manipulators/sensors

- Developed pneumatically actuated soft robot leg: presented at Soft Robotics workshop at ICRA 2015
- Designed hardware and visualization software for stretchable tactile-sensing skin for manipulators

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PUBLICATIONS

- Otani, Kazuya, and Karim Bouyarmane. "Adaptive Whole-Body Manipulation in Human-to-Humanoid Multi-Contact Motion Retargeting." *Humanoid Robots (Humanoids), 2017 IEEE-RAS 16th International Conference on Humanoid Robots*. IEEE, 2017.

Other work

- Drotman D., Friesen J. M., Otani K., Tolley M. T. (2015) "Multiple Degree of Freedom Pneumatic Actuation for an Untethered Soft Robotic Quadruped", Soft Robotics: Actuation, Integration, and Applications Workshop, Int. Conf. on Robotics and Automation (ICRA), Seattle WA, May 2015.

TEACHING

Graduate Teaching Assistant, Carnegie Mellon University January 2017 – May 2017

Assisted Akihiko Yamaguchi and Chris Atkeson at the Robotics Institute in running the 16-264 Humanoids course

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INVITED TALKS

- IEEE-RAS 16th International Conference on Humanoid Robots, November 2017, Workshop: "Human-Humanoid collaboration: the next industrial revolution?"

SKILLS

Software

- Languages: C++, Python, Matlab, Julia
- Frameworks: ROS, Eigen, Numpy, Keras, Tensorflow

Hardware

- Design: Solidworks, Inventor, Autocad, Onshape, Fusion 360, Eagle
- Fabrication: 3D printers, bandsaw, 3-axis mill, CNC mill, lathe, drill press, soldering