Patrick Lancaster

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EDUCATION

University of Washington, Seattle, WA   2014 - Present
    Ph.D.   Computer Science and Engineering

University of Washington, Seattle, WA   2011 - 2014
    B.S.E.E.   Electrical Engineering (Embedded Systems)
    B.S.   Applied Computational and Mathematical Sciences

RESEARCH

Graduate Research Assistant, University of Washington   2014 - Present
    Advisors: Siddhartha S. Srinivasa & Joshua R. Smith
    Thesis: Sensing and Actuation for Dexterous Manipulation

Undergraduate Research Assistant, University of Washington   2012 - 2013
    Advisor: Eve A. Riskin
    Project: AAC Mobile Application for Children with Autism

PRE-PRINTS

P. Lancaster, C. Mavrogiannis, S.S. Srinivasa, J.R. Smith. Electrostatic Brakes Enable Individual Joint Control of Underactuated, Highly Articulated Robots. To be submitted to *International Journal of Robotics Research*, 2022.

P. Lancaster, P. Gyawali, C. Mavrogiannis, S.S. Srinivasa, J.R. Smith. Optical Proximity Sensing for Pose Estimation During In-Hand Manipulation. Submitted to *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2022.

PUBLICATIONS

B. Yang, G. Habibi, **P. Lancaster**, B. Boots, J.R. Smith. Motivating Physical Activity via Competitive Human-Robot Interaction. In *Conference on Robot Learning*, 2022.

B. Yang, **P. Lancaster**, S.S. Srinivasa, J.R. Smith. Benchmarking Robot Manipulation with the Rubik's Cube. In *IEEE Robotics and Automation Letters*, 2020.

S.S. Srinivasa, **P. Lancaster**, J. Michalove, M. Schmittle, C. Summers, M. Rockett, J.R. Smith, S. Choudhury, C. Mavrogiannis, F. Sadeghi. MuSHR: A Low Cost, Open Source Robotic Racecar for Education and Research. Pre-published on *arXiv*, 2019.

P. Lancaster, J.R. Smith, S.S Srinivasa. Improved Proximity, Contact, and Force Sensing via Optimization of Elastomer-Air Interface Geometry. In *IEEE International Conference on Robotics and Automation*, 2019.

K. Huang, **P. Lancaster**, J.R. Smith, H.J. Chizeck. Visionless Tele-Exploration of 3d Moving Objects. In *IEEE International Conference on Robotics and Biomimetics*, 2018.

P. Lancaster, B. Yang, J.R. Smith. Improved Object Pose Estimation Via Deep Pre-touch Sensing. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2017.

B. Yang, **P. Lancaster**, J.R. Smith. Pre-touch Sensing for Sequential Manipulation. In *IEEE International Conference on Robotics and Automation*, 2017

C. M. Watts, **P. Lancaster**, A. Pedross-Engel, J. R. Smith, M. S. Reynolds. 2D and 3D Millimeter-Wave Synthetic Aperture Radar Imaging on a PR2 Platform. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2016.

D. Guo, **P. Lancaster**, L.T. Jiang, F. Sun, J.R. Smith. Transmissive Optical Pretouch Sensing for Robotic Grasping. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2015.

POSTERS

B. Yang, **P. Lancaster**, J.R. Smith. Prospects for Combining Task and Motion Planning for Bi-Manual Solution of the Rubik's Cube. In *Robotics: Science and Systems* 2016.

TEACHING

Instructor, Introduction to AI for Mobile Robots (EEP 545)	Autumn 2018
Graduate Teaching Assistant, Robotics (CSE 490R)	Winter 2018
Student Mentor, Center for Sensorimotor Neural Engineering	Summer 2015/2016
Graduate Teaching Assistant, Microcomputer Systems (EE 472)	Summer 2014
Undergraduate Teaching Assistant, Embedded Systems Capstone (EE 478)	Spring 2014
Undergraduate Teaching Assistant, Microcomputer Systems (EE 472)	Winter 2014

OTHER WORK EXPERIENCE

Applied Scientist Intern, Amazon Robotics AI	January 2019 - March 2019
Undergraduate Intern, Sandia National Laboratories	June 2013 - September 2013

HONORS / AWARDS

Graduated Magna Cum Laude

University of Washington President's Medal Nominee