HUNTER LEON BROWN

Phone: (435) 703-4762   1300 Baker Court
Hunter.Brown4762@gmail.com   Oak Harbor, WA 98277

RESEARCH INTERESTS

Robotics; Machine Learning; Artificial Intelligence; Autonomous Planning; Autonomous Learning; Perception; Reinforcement Learning; Transfer Learning; Computer Vision; Deep Learning; Interactive Perception; Language Grounding; Human-Robot Interaction; Natural Language Processing.

EDUCATION

University of Utah, Department of Mechanical Engineering
Combined BS/MS Cum Laude Mechanical Engineering, Robotics Track, 2018
- o Thesis: "Using geometric primitives to unify perception and action for object-based manipulation"
- o Advisor: Dr. Tucker Hermans

Dixie State University, Mathematics Department
Coursework in Mathematics and Engineering, 2012-2014

RESEARCH EXPERIENCE

Thesis, University of Utah, Salt Lake City, Utah   2016-2018
Advisor: Dr. Tucker Hermans
- Developed end-to-end process unifying perception and manipulation around a geometric primitive
- Developed multisensory perception and machine learning tools for LL4MA's general use.
- Clutter Scene Segmentation: RGB-D Region Growing Techniques, RANSAC variations, mixture models, and CNNs.
- Haptic Feature Extraction: BioTac, Force and Inertia Sensors
- Sound Feature Extraction: ROAR pipeline and pretrained NNs
- Machine Learning Paradigms: POMDPs, Markovian Chains, Bayesian, SVM, and Heuristics
- Platforms: KUKA iiwa; Baxter; Allegro Hand; Reflex TakkTile Hands

Ergonomics and Safety Lab, University of Utah, Salt Lake City, Utah   2016-2018
Advisor/Lab Director: Dr. Andrew Merryweather
- Developed prototype Assistive Robotic Arm designed to hold a computer with Tobii eye tracking system for use by quadriplegic patients
- Face-Tracking: HOG features from RGB image used to extract a face model estimating patient face pose as control input.
- Mechanical Design: novel robotic arm to be used safely in medical facilities. Compliant regardless of power state.

College of Science, Dixie State University, Saint George, Utah   2013 to 2014
Lab Director: Dr. Samuel Tobler
- Lab Assistant: Maintained vacuum chamber and attached system, organized lab equipment and tools and prepared materials for experiments

HONORS AND AWARDS

6x Dean's List Award	2014-2018
Thomas & Linda Howell Alumni Scholar	2015-2017
Utah Regional FIRST Robotics Competition: Fifth Place	2012
Utah Regional FIRST Robotics Competition: Second Place	2011

PUBLICATIONS

Brown H.L., Using Geometric Primitives to Unify Perception and Action for Object-Based Manipulation [master's thesis]. [Salt Lake City (UT)]: University of Utah; 2018. 51p.

REFERENCES

Dr. Tucker Hermans, Assistant Professor
School of Computing
University of Utah
50 S Central Campus Drive Room 3190
Salt Lake City, UT, 84112
Phone: (801)581-8122
Email: tucker.hermans@utah.edu

Dr. Andrew Merryweather, Associate Professor
Department of Mechanical Engineering
University of Utah
1495 E 100 S Room 1674
Salt Lake City, UT, 84112
Phone: (801) 581-8118
Email: a.merryweather@utah.edu

Dr. Bryan Bornholdt, Associate Professor-in-Residence, Honors College (Mathematics)
University of Nevada, Las Vegas
4505 S. Maryland Pkwy.
Las Vegas, NV 89154
Phone: (702)895-1098
Email: bryan.bornholdt@unlv.edu