

Tyler M. Frasca

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Objective Researching how to teach robotic agents how to perform new tasks

Education

Tufts University

MS/PhD Computer Science

Wentworth Institute of Technology

2015

Bachelor of Science, Electromechanical Engineering

Minor, Applied Mathematics

- GPA 3.63, Cum Laude
- Fundamentals of Engineering Certificate
- Tau Alpha Pi
- Python, Matlab, C++, KiCad, LaTeX, Linux, Minitab, R-project, SolidWorks, Microsoft Office
- Machine Learning, Feedback & Controls, Electromechanical Systems, Adv. Mathematical Modeling

Publications

Spoken Instruction-Based One-Shot Object and Action Learning in a Cognitive Robotic Architecture

2017

Recipient of the AAMAS 2017 Best Paper Award

Autonomous Agents and Multiagent Systems

Cornhole: A Widely-Accessible AI Robotics Task

2017

Educational Advances in Artificial Intelligence

A Comparison of Supervised Learning Algorithms for Telerobotic Control

2016

Using Electromyography Signals

Association for the Advancement of Artificial Intelligence

Control of Camera of a Telerobotic Human Computer Interface

2015

American Society of Mechanical Engineers, International Mechanical Engineering Congress & Exposition

Research Experience

NASA Space Robotics Challenge

2017

Team Leader, Ring of the Nibelungs, Tufts University

- Finished 11th out of 20 finalists
- Developed interface between NASA's Valkyrie ROS component and DIARC Cognitive Architecture
- Developed walking mechanism to tell Valkyrie to walk to a relative location and orientation

Corn Hole Robot, Wentworth Institute of Technology

2016

Accelerate Innovation Fellow; Researcher, Artificial Intelligence and Robotics Lab

Goal: Develop a robotic system capable of learning how to play and score the game corn hole

- Helped prepare a grant proposal
- Simulated bean bag trajectory and impact kinetics
- Implemented and evaluated temporal difference reinforcement learning method

Electromyography Control for Telerobotic using Supervised Learning

2015

- Finalist for AAAI-16 Student Abstract and Poster Program
- Researched electromyography signals for actuation input
- Compared machine learning algorithms for classification

Control for Camera of a Telerobotic Human Computer Interface

2015

- Co-authored paper accepted for publication at ASME IMECE 2015
- Developed an immersive and natural control system for precision motion
- Controlled cameras on a robot using the Oculus Rift head mounted display
- Compared operator's response characteristics between the Oculus Rift and a computer mouse

Hexapod

2014

- Researched Hexapod gait
- Designed skeleton of a six legged walking robot using SolidWorks software
- Implemented infrared and laser range sensors

Work Experience

NeuroFieldz, Northeastern University

2015

Research & Development Engineer

- Designed graphical user interface for real-time data acquisition
- Engineered circuit design and layout for a bio-potential amplification board
- Developed embedded firmware for the amplification board

Siemens Healthcare Diagnostics, Boston, MA

2014

Intern, Systems Development Engineering

- Tested and analyzed power consumption of batteries in a medical device
- Designed a printed circuit board

Wentworth Institute of Technology, Boston, MA

2013

Tutor, Learning Center

- Guided fellow students through problem solving in engineering courses
- Supported students by using Think-Pair-Share strategy to develop them into self-sufficient learners

Covidien, North Haven, CT

2013

Intern, Advanced Manufacturing Engineering

- Designed procedures to test components for Tri-Staple™
- Authored engineering reports for experiments
- Assisted co-workers in designing a new product assembly line