NEIL ABCOUWER

neil@neilabcouwer.com
717.497.2855
U.S. Citizen

EXPERIENCE

NASA Jet Propulsion Laboratory Pasadena, CA
Robotics Electrical Engineer, Mobility and Robotic Systems Section July 2014 – Present

- Developing simulation and hardware testbeds for orbital sample transfer for Mars Sample Return mission
- Writing kinematic and gait algorithms for ISS Robotic Inspection System employing gecko micro-adhesive grippers
- Improving micro-gravity simulation gantry to support arbitrary gravity and disturbance forces and higher velocities
- Designed schematic and board layout for compact, high-voltage motor controller for Robosimian Cam-Hand
- Programmed kinematics and offline testing mode for six-limbed Small Body Surface Sampler and Explorer robot

The Robotics Institute, Carnegie Mellon University Pittsburgh, PA
Student Researcher, Biorobotics Laboratory August 2012 – June 2014

- Constructed, programmed and operated four omnidirectional co-planar manufacturing research robots
- Developed algorithms for localization, multi-robot coordination, and distributed visual servoing of large assemblies
- Designed electronics and firmware for hybrid passive-active linear manipulator tool
- Wrote firmware and software interfaces for various motor drivers and other mechatronic devices
- Created kinematic balancing and stereo vision algorithms for modular snake robots
- Won $1000 Boeing Blue Skies Award at Meeting of the Minds undergraduate research symposium

The Boeing Company Everett, WA
Engineering Intern, In-Flight Entertainment May 2012 – August 2012

- Built proof-of-concept database utility to automate certification process for new In-Flight Entertainment systems
- Used previous certification data to save dozens of work-hours per system for Certification Focal and engineers
- Earned Pride@Boeing Achievement Award for process improvement

Carnegie Mellon University Pittsburgh, PA
Teaching Assistant January 2012 – June 2014

- Supported five different graduate and undergraduate classes in robotics, control theory, and electrical engineering
- Taught class and lab sessions, reviewed team progress, evaluated projects, tests, and homework, held office hours

Community Advisor February 2012 – May 2013

- Supervised seven Resident Assistants and managed programming for four upper-class housing communities

OnStar, General Motors Detroit, MI
Intern, Advanced Systems Development May 2011 – August 2011

- Provided proof of concept for a Service-Oriented Architecture to unify mobile app web services
- Developed applications in BPEL (Business Process Execution Language) and JavaEE

EDUCATION

Master of Science, Robotics, Carnegie Mellon University May 2014
GPA: 4.07/4.33 Pittsburgh, PA

Bachelor of Science, Electrical and Computer Engineering, Carnegie Mellon University May 2013
GPA: 3.94/4.0 Minor: Robotics University and College Honors Pittsburgh, PA

Engineer In Training Certification, Pennsylvania License ET018543 May 2013

SKILLS

Circuits (Eagle), Sensors, Controls, Kinematics, Programming (C, C++, Assembly, Python, Java), MATLAB, Linux

AWARDS

Frank J. Marshall Outstanding Undergraduate Award, ECE Department, Carnegie Mellon University 2013
Outstanding Project Award, Build18 Hackathon, Carnegie Mellon University 2012
Andrew Carnegie Society Scholarship, Carnegie Mellon University 2012