JAIMIE CARLSON

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EDUCATION

University of Pennsylvania *June 2019*
M.S.E., Robotics

University of Pennsylvania *June 2018*
B.S.E., Bioengineering & Computer Science
Overall GPA: 3.97/4.00; **Bioengineering:** 3.93/4.00; **Computer Science:** 3.97/4.00
Relevant Coursework: Computer Vision; Brain-Computer Interfaces; Biomechatronics; Robotics; Computational Robotics; Bioengineering Lab I II; Algorithms; Computer Organization and Design; Networks and Security; Operating Systems

EXPERIENCE

Amazon Robotics June 2017 - Aug 2017; June 2018 - Aug 2018
Software Engineering Intern *North Reading, MA*
· Rendering ROS data in Unity for autonomous vehicle system
· Researched and developed indoor localization system with sensor fusion and multiple filtering techniques

Neuroflow Oct 2017 - May 2018
Software Engineering Intern *Philadelphia, PA*
· Developed JavaScript charts library for tracking EEG data
· Created automated report of business analytics using SQL

University of Pennsylvania Jan 2016 - May 2017; Jan 2018 - May 2018
Researcher *Philadelphia, PA*
· Rehab Robotics Lab: Developed web page to stream video data and allow interaction with ROS robot model
· GRASP Lab: Designed and implemented program to analyze expert surgical video with OpenCV
· GRASP Lab: Combined program with da Vinci Robotic Surgical System to make interactive augmented-reality training platform
· GRASP Lab: Helped build and program haptic interface to simulate fluid environments with Navier-Stokes equations

Teaching Assistant, University of Pennsylvania Aug 2016 - Jan 2017; Jan 2015 - June 2015
CIS 121, CIS 110 *Philadelphia, PA*
· Ran office hours, wrote and graded homework and midterms

PROJECTS

Senior Design / Bioengineering Lab
· Developed a novel two-glove hand exoskeleton for mirror therapy in hemiparetic patients
· Developed robust, lightweight system to filter heart and breathing rate from ECG data
· Built human-machine interface to control prosthetic made of cockroach leg and servo motor

ProtoFluidics
· Designed a modular system of microfluidics to be 3D printed aboard International Space Station
· Developed webapp to streamline microfluidic design process

Marauder's Mapp
· PennApps Semifinalist; Android social media app to track friends locations using Google Voice, Google Maps, and Parse APIs

TECHNICAL STRENGTHS

Languages	Java, C++, C#, C, MATLAB, Python, JavaScript, HTML, CSS, Objective C, Processing, OCaml, PHP, R, Verilog, Go, LC4
Tools & Software	ROS, OpenCV, SQL, Unity, Windows, Linux, OS X, Node.js, Qt, Android Studio, XCode, Git, LaTeX
Hardware	Arduino, Raspberry Pi, breadboarding, soldering, data acquisition systems
Mechanical	CAD (SolidWorks), 3D printing, laser cutting
Biological	Dissection, microCT, Instron bending tests

PUBLICATIONS

· Carlson, J. Kuchenbecker, K. An Interactive Augmented-Reality Video Training Platform for the da Vinci Surgical System. ICRA 2017: C4 Surgical Robots, 47-49.
· Carlson, J., Carlson, K., Kuykendall, B., Brown, D. (2014). A Review of the Practical Capacities and User Perception of the SixthSense Device. IHCI 2014, 239-244.

HONORS AND ACTIVITIES

Honors: Hugo Otto Wolf Memorial Prize; John Grist Brainerd Award; Tau Beta Pi; Eta Kappa Nu; Rachleff Scholar; Dean's List 2014-2018
Activities: Penn Quizbowl (nationally ranked academic team), Alpha Omega Epsilon (social / professional engineering sorority)
Interests: medical devices, hackathons, classic literature, science fiction, art history, trivia, tennis