REBECCA (BECKY) ABRAMOWITZ

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EDUCATION

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA

MSE, Robotics (December 2018) GPA: 3.94/4.00

Coursework: Design of Mechatronic Systems, Robotics, Computer Graphics (C++), Machine Perception, Applied Machine Learning, Feedback Control, Control & Optimization for Robotics, Autonomous Racing, Performance & Control of UAVs

BSE, Mechanical Engineering and Applied Mechanics, Minor in Computer Science (May 2018) GPA: 3.90/4.00

Activities: Alpha Omega Epsilon, Pledge/Social/Recruitment Chair. ASME, Webmaster.

Honors: Hugo Otto Wolf Memorial Prize (highest faculty approval in department), Summa Cum Laude, Tau Beta Pi, Dean's List all years

EXPERIENCE

X – THE MOONSHOT FACTORY (formerly Google X), Mountain View, CA May – August 2018

Robotics Intern

- Designed and implemented software stack to assess 3D sensors. Wrote drivers, data converters/loggers, point cloud analysis (C++).
- Developed software framework for safety analysis and sensor placement using robot kinematics and safety-rated sensor frames.
- Worked on small, fast-paced hardware team. Experience with Linux, Docker, TCP/IP, novel sensor technology. Some ROS, CAN bus.

AMAZON.COM, Seattle, WA May – August 2017

Software Development Engineering Intern, Amazon Fulfilment Technologies

- Designed and implemented full-stack web application to set configurations and overrides for fulfillment center capacity optimization. Site is currently being used by fulfillment centers domestically and worldwide.
- Utilized Agile programming techniques, Git, Dynamo DB, S3, AngularJS, Spring Framework. Collaborated with UX team to design UI.

UNIVERSITY OF PENNSYLVANIA, Philadelphia PA

MEAM 445 (Mechanical Engineering Design Projects) Teaching Assistant August – December 2018

- Assisted with ideation, engineering-informed design, project management, and presentation techniques for senior capstone projects.

CIS 120 (Programming Languages & Techniques: OCaml, Java) Course Staff Aug 2015 – May 2017, Jan – May 2018

- Planned and led weekly recitations for 20+ students. Held weekly office hours. Graded homework and exams.
- Head of CIS 120 recitation materials for two semesters. Created and established generalized recitation presentations and guides.

COMCAST, Sunnyvale, CA May – June 2016

Intern, Office of VP of Product Strategy & Development

- Collaborated with xFi UX team to dogfood test software. Recommended ways to improve ease of use.
- Prepared comprehensive competitive analysis of consumer sentiment on home router products.

AUTODESK INC., San Francisco, CA June – August 2015

Applied Innovation Intern, Office of the CTO

- Collaborated with two interns to design, CAD, and create a novel, foldable bike helmet profiled in FastCompany.
- Provided input to Fusion360 software and design teams. Designed new features, including a spur-gear plugin.

PROJECTS

- Developed strategy and wrote code (C) for 3 autonomous, hockey-playing robots for graduate mechatronics course.
- Led software development (C++) and hardware-software integration for a six-person Senior Design project to develop an autonomous wearable for children with Autism as well as accompanying iOS application (Swift). Project won Judges' Choice Award.
- Worked on a team to develop code for a small, LiDAR-based, autonomous car, including MPC for head-to-head racing (C++, Python).
- Implemented and assessed robustness of the DIRTREL direct transcription-based approach to robust trajectory optimization (MATLAB).
- Solved inverse kinematics and collaborated to develop code (MATLAB) for a 6 DoF PUMA robot to create a 3D drawing.
- Implemented and tuned closed-loop PID control (C) to stabilize a reverse pendulum robot.
- Implemented game states, physics/collisions, multi-threading, and post-process shaders for interactive "Mini-Minecraft" game (C++).
- Worked on a team to develop and tune a series of ML models (Python) that predict the likelihood that a bill becomes law.

SKILLS & INTERESTS

Software: Proficient at Java, C++, MATLAB, C, Python, OCaml, Git. Working knowledge of JavaScript, Swift, HTML, CSS, Objective C.
Mechanical: Proficient in SolidWorks, Fusion360. Experience with 3D Printers, Laser Cutters, Drill Press, Miter Saw, Band Saw.
Other: Adobe InDesign, WordPress. Enjoy traveling, running, hiking, and exploring the outdoors.