Douglas Hutchings

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EDUCATION

University of California, Berkeley *M.Eng. in Mechanical Engineering* *Expected: May 2025*
Concentration: Control of Robotic and Autonomous Systems
University of California, Berkeley *B.S. in Mechanical Engineering* *Graduated: December 2015*

COURSEWORK

Experiential Advanced Control Design	Machine Learning Tools	Control of Multi-Agent Systems
Design of Microprocessor Based Systems	Feedback and Control Systems	Mechatronic Design Laboratory
Introduction to Product Development	Introduction to Robotics	Organizational Behavior

SKILLS

Computer Tools: Solidworks, Creo Elements, Windchill, Matlab, Simulink, Git, Eagle, ROS, FEMM
(Programming) Languages: C, Java, C++, Python, Mathematica, JavaScript (Basic), Japanese (Basic)
Qualifications: Part 107 Commercial Drone License, Private Pilot License

PROFESSIONAL EXPERIENCE

Lead Mechatronics Engineer, Squishy Robotics *May 2018 – June 2024*
- Coordinate day-to-day technical efforts building air-deployable HazMat Robots for use by First Responders.
- Conducted customer discovery research through Regional I-Corps Program and on-site demonstrations.
- Led competitively selected R&D efforts for the U.S. Army, Office of Naval Research & NSF totaling $1,786,000.
- Developed embedded systems for motor control, battery management, gas sensing, and communications.
- Mentored junior employees, interns & master's students; collaborated with university researchers.

Production Engineer, Anthropocene Institute – Sapphire Motors *Aug 2017 – May 2018*
- Prototyped Novel DC Brushless electric motor in the 10kW-100kW power range via novel magnetic modeling.
- Applied manufacturing techniques developed on miniature prototypes to motor production process.
- Built test setup to collect Back EMF, Eddy Current & Windage data; developed empirical models.

R&D Engineer 1, B.ES.T. Lab, M.E. Dept, UC Berkeley *April 2017 – Aug 2017 (Full Time) – May 2018 (Part time)*
- Designed & Deployed new robust robotic control system for use in research-grade Tensegrity Robots.
- Led team that iterated robot 3x faster than previously accomplished. Robot now used as general platform.
- Instructed researchers on best practices for software and electrical development.

Electronic Technician, E.E.C.S. Dept, UC Berkeley *Jan 2016 – Aug 2016*
- Delivered logistical and technical support for two upper division robotics courses of thirty students each.
- Developed & Deployed telemetry, control, and electrical systems to improve student learning in the classes.

Hardware Engineering Intern, Google Inc *Summer 2013*
- Developed a robotic device to route network cabling bundles between devices in Data Centers (DCs).
- Defined a way forward for possible comprehensive and quick deployment of the system in DCs.
- Designed user-friendly sheet metal packaging for electronics to increase hard drive erasure throughput.

RESEARCH

Research Assistant, Biomimetic Millisystems Laboratory, UC Berkeley *Summer 2012, Fall 2014 – 2015*
- Developed a robotic control system and production method for ~30 gram crawler robots.
- Characterized vertical wall climbing capabilities of the crawler robots.

Intern, Carnegie Mellon University – Silicon Valley *Summer 2011*
- Researched consumable free, maintenance free robotic method of cleaning Photovoltaic Solar Cells.

ACTIVITIES

Pioneers in Engineering (PiE) *Fall 2011 – Present*
PiE is a UC Berkeley student organization that runs STEM outreach programs for local East Bay schools.
- **Foundation Treasurer** *February 2015 – Sept 2019*

Led the Financial aspect of PiE's Foundation Project, a successful effort to establish PiE as a 501(c)(3) non-profit.