Alex Abrams

asa67@cornell.edu • (914) 450-8448 • 116 S O'Leary St, Flagstaff, AZ, 86001

Education

Cornell University, College of Engineering
Bachelor of Science in **Mechanical and Aerospace Engineering,** May 2015
GPA: 3.16, **Dean's List** Fall 2011

Work Experience

Research and Development Engineer Nov. 2015 - April 2017
40 hours / week
Creare LLC, Hanover, NH
Contributed to the success of a wide array of SBIR-funded research and development projects for large-scale government and private clients. Demonstrated versatility of skills and the ability to fulfill multiple roles in the firm.

Engineering Intern June 2014 - August 2014
40 hours / week
Innovative Dynamics, Inc., Ithaca, NY
Performed ANSYS Multi-Phase CFD simulations for design optimization of a cyclonic particle separator. Programmed Ice-Detection software in C for a Ubuntu Unix-based environment.

Engineering Projects

- **Medical Research Application Development:** Developed a desktop application in **Python** to help researchers gather data on human hearing. The application was for an academic client looking to research the connection between HIV/AIDS and hearing loss. Developed protocols to interface with hardware used for testing human hearing. Also wrote a suite of tests used to gather data on a variety of hearing conditions for each test subject. Deployment of this test was successful in a study performed by the research group in Tanzania.
- **Laser Metrology System Development:** Wrote and executed a test plan to validate the functionality of a laser metrology system used to measure fastener flushness on aircraft fuselages. Directed fellow engineers and technicians to carry out the test plan, gathered data and analyzed the results to validate the functionality of the system. Successful execution of this test plan lead to the commercialization of the technology under an SBIR grant.
- **Aircraft Catch and Release System:** Analyzed the motion of a catch and release system for naval aircraft using **Matlab, Python,** and fundamental equations of motion. Created animations of the system in motion for use in a client report. Data from analysis was used successfully to optimize the design of holdback bar to secure aircraft while building thrust.
- **Firmware development** for a star tracking satellite, **cryocooler system** design and analysis, educational **video game development** in **Unity**.

Skills

Engineering Applications

- ANSYS (Fluent CFD, Structural)
- Solidworks / Inventor
- Matlab
- LabVIEW

Programming Experience and Tools

- Application Development (Python, C#)
- Web Development (JavaScript, HTML, CSS)
- Video Game Development (Unity)
- Version Control (git, SVN)
- Firmware Development (C)
- Java, C++, Visual Basic

Research Experience

Senior Design Project: Autonomous Bicycle Jan. 2015 - May 2015, 20 hours / week
Cornell University Biorobotics and Locomotion Lab, Ithaca, NY
Optimized bicycle controller utilizing non-linear dynamics and evolutionary optimization algorithms (CMA-ES).

Sabbatical

During the spring of 2017, I voluntarily left my position at Creare LLC in order to pursue employment in an area that is more aligned with my passions. In the interim period, I took time to explore my passion of climbing and outdoor recreation. Looking forward to relaunching my career in engineering, I feel more energized and prepared to tackle the challenges of my field than I ever have before.

Additional Experience

Vice President and Climbing Chairperson August 2012 - May 2015
20 hours / week
Cornell Outing Club, Ithaca, NY
Facilitated club meetings and ran climbing excursions for all ability levels. Procured funding from the university for new climbing gear. Ordered, organized, and maintained gear for the club. Negotiated with university administration to secure a new meeting and equipment storage facility for the organization.

Trip Leader August 2013
40 hours / week
Outdoor Odyssey Program through Cornell Outdoor Education, Ithaca, NY
Lead a group of incoming Cornell freshman on a week-long backpacking and rock climbing excursion in the Catskill mountains of New York. Taught lessons in rock climbing skills and safety, backcountry cooking and camping, and wilderness travel and navigation.

Outdoor Program Facilitator June 2013 - August 2013
40 hours / week
Cornell Adult University Summer Camps, Ithaca, NY
Directed programs in rock climbing, ropes course activities, canoeing, and hiking.

Research Assistant June 2012 - July 2012
40 hours / week
Cornell University Department of Electrical and Computer Engineering, Ithaca, NY
Wrote a device driver program for a new Microwave Transition Analyzer using C++ and IC-CAP software.

Additional Coursework

NOLS Waddington Range Mountaineering July 2012 - August 2012
National Outdoor Leadership School, Mt Vernon, WA
Participated in a rigorous month-long glacier mountaineering expedition in the British Columbia coast range.

Wilderness First Responder June 2012
Cornell Outdoor Education, Ithaca, NY
Learned wilderness first aid and rescue skills in preparation for leading a backpacking a rock climbing trip for incoming Cornell freshman.

References available upon request.