Bereket Abraham

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EDUCATION

Carnegie Mellon University **Pittsburgh, PA**
Master of Science, Mechanical Engineering, GPA 3.9/4.0 May 2017
Concentration: Robotics
Selected Coursework: Nonlinear Controls, Computer Vision, Computer Systems

Princeton University **Princeton, NJ**
Bachelor of Science in Engineering, Mechanical and Aerospace Engineering, GPA 3.1/4.0 June 2013
Certificates in Applied and Computational Mathematics, Applications in Computing, and Robotics

PROJECT EXPERIENCE

RoboBuggy, Robotics Club, CMU Fall 2016
- Led the autonomous software sub-team for the RoboBuggy project, a self-driving downhill racer.
- Simulated and redesigned the localizer and steering controller algorithms. Tested monocular vision based path planning.

Monocular Visual-Inertial State Estimation, Fields Robotics Center, CMU Fall 2016
- Optimized an experimental state estimation software package in order to run in real-time on quadrotor.

Window Washer Robot, Mechatronics, CMU Spring 2016
- Designed and fabricated a robot that could traverse vertical glass surfaces, as part of a team of five.
- Managed control software, simulation, web development and joint design to enable horizontal motion.

WORK EXPERIENCE

NASA Goddard Space Flight Center **Greenbelt, MD**
Mechanical Engineer Intern, Systems Engineering Team May 2016 – August 2016
- Analyzed requirement verification reports in order to assess readiness to launch for the GOES-R weather satellite program.

AppNexus, Inc. **New York, NY**
Software Engineer, Web Services January 2015 – January 2016
- Implemented reporting features using C in core real-time web application to enhance ad buying product.
- Built out multiple web based API services in Java and PHP to decouple integration between systems.
- Built and maintained third party integrations with partner ad exchanges to unlock client spend.

Associate Technical Consultant, Global Services July 2013 – December 2014
- Administered databases and servers, supported legacy code, developed best practices, integrated with third-party systems, and gathered requirements for the Services department.
- Advised clients on the AppNexus data warehouse, reviewed different technologies for data storage, and wrote ETL scripts to help export certain datasets.

Florida State University **Tallahassee, FL**
Research Intern, Computational Fluids Laboratory June 2012 – March 2013
- Utilized CFD Fortran code in order to simulate low speed, unsteady flow around a cylinder, which has applications in small-scale flight, such as the bio-inspired flow of birds and fish.

SKILLS AND ACTIVITIES

Programming Languages: C, C++, Java, MATLAB, Python, JavaScript, PHP, HTML, MySQL, Bash
Organizations: NSBE, CMU Robotics Club, Toastmasters, Engineers Without Borders
Presentations:

Abraham, B. & Fleury, L. (August 2016). *Rocket Powered Descent in R^3*. Paper presented at the NSBE Aerospace Systems Conference, Arlington, VA. Received the **Technical Paper Award** for best written paper.

Abraham, B., Taira, K. & Shih, C. (February 2013). *Low Reynolds number simulation of accelerating flow around 2D circular cylinders*. Poster session presented at the Emerging Researchers National Conference, Washington, DC.