William Guiracoche

EDUCATION

Princeton University **Class of 2017**
B.S.E. in Mechanical Engineering and Aerospace Engineering
Certificate in Robotics and Intelligent Systems
Senior Thesis: Design of a Closed-Loop Feedback System for Testing and Prototyping New Deformable Mirror Technologies
Project Advisor: Professor N Jeremy Kasdin

Relevant Courses: Microprocessors for Measurement and Controls, Space Flight (Orbital Mechanics), Automatic Control Systems, Space System Design, Rocket and Air-Breathing Propulsion Technology, Engineering Dynamics, Planets in the Universe, Ethics and Technology, Structure and Properties of Materials, Fluid Dynamics, Thermodynamics, Algorithms and Data Structures in Java.

PROFESSIONAL EXPERIENCE

Research at Princeton – High Contrast Imaging Laboratory **Princeton, NJ**
Undergraduate Research Assistant for Professor N Jeremy Kasdin *June 2016 – May 2017*

- Assisted with the design, assembly and testing of a ferrofluid deformable mirror prototype
- Replicated mirror electronics from component level to provide recommendations for redesign efforts
- Worked intensively with I2C protocol and LabVIEW to improve controllability of deformable mirror surface

Research at Princeton - Thermodynamics and Integrated Science Laboratory **Princeton, NJ**
Undergraduate Research Assistant for Professor Daniel Steingart *July 2015 – September 2015*

- Coded in Python and C to interact with lab experiments through pithy (python server created by Professor Steingart)
- Created circuit boards to measure thermodynamics experiments in the Integrated Lab and current in final project
- Transposed sophomore integrated lab from Arduino to Spark Core (Particle)
- Created small prototype car for final lab project to present to the sophomore class

Engineers without Borders **Samne, Peru and Princeton, NJ**
Travel Team Member (Peru) *Summer 2014, summer 2015*

- Completed a project to build a 3.5 kilometer pipeline in Northern Peruvian mountains with a team of six members
- Surveyed the land and assisted with hydraulic grade line calculations
- Communicated with the Peruvian community and coordinated the project in Spanish

Community Subteam Leader (Princeton) *June 2015 – June 2016*

- Led a team and presented decision making analysis to select a community for future projects
- Designed a method using the House of Qualities that compared communities to make a decision that aligned with our objectives
- Trained and assisted the freshman co-leader member to lead the team in the following years
- Worked with the Technical Team and provided hydraulic grade line calculations by using coordinates and elevation points

Opening Project Subteam Leader (Princeton) *January 2014-June 2015*

- Prepared written proposals to submit to the EWB Organization and translated technical documents between English and Spanish
- Worked on analysis and methods to assess new communities

LEADERSHIP ROLES AND INVOLVEMENT

Mechanical and Aerospace Engineering Student Council **Princeton, NJ**
President *June 2015 – June 2017*

- Built dialogue on curriculum improvements with professors to lead a movement to increase practical experience for MAE students. After two years of serious conversation, the department finally created a course dedicated to training MAE underclassmen in electronics and 3D modeling.
- Planned and coordinated with professors to organize class-wide trips to enhance professional development and student camaraderie
- Presented the needs and interest

American Society of Mechanical Engineers ASME/American Institute of Aeronautics and Astronautics AIAA **Princeton, NJ**
Princeton Chapter President *June 2015 – December 2016*

- Planning, organizing and leading on-campus activities and events for ASME/AIAA members to gain skills and practical experience, and to network with professional engineers outside the classroom
- Promoting the ASME/AIAA membership to fellow Mechanical and Aerospace students and maintain communication with ASME/AIAA faculty advisors

Old NasSoul A Cappella Group **Princeton, NJ**
Member and Social Chair *September 2014 – July 2017*

- Planned, organized and coordinated performance events and activities to promote the group on campus and build group unity

SKILLS AND AWARDS

Skills: Proficient in Java, Python, C, Matlab, LabVIEW Simulink and CREO; Algorithms and Data Structures, Experience with Spark Core (Particle), myRIO and Arduino; I2C Protocol; Microsoft Excel, Word and PowerPoint; Fluent in Spanish and Intermediate Italian speaking
Award: The George Bienkowski Memorial Prize