

# Fernando A. Pascual

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**Skills**

- **Programming Languages:** Proficiency in Java; Knowledge of Python, Ruby, C, HTML, CSS, JavaScript, Assembly
- **Design and Manufacturing:** SolidWorks CAD, FEA, CNC Machining (Milling, Lathe), LabView, Embedded Systems, Arduino
- **Languages:** Native Fluency in English and Spanish, Intermediate Portuguese, Basic Japanese

## Professional Experience

### **NORESCO, United Technologies Corporation**

**New York, New York**

*Engineer I*

October 2019 – Present

- Designed and executed testing procedures for 15 project sites in New York City ranging from medical to commercial buildings
- Informed clients on the results of testing procedures and advised on paths to issue resolution
- Collected over 5000 room pressurization samples throughout hospitals in New York City during COVID-19 pandemic

### **Final Frontier Design Space Suit Research and Development**

**Brooklyn, New York**

*Engineering Intern*

June – August 2018

- Decreased manufacturing costs by 10% and the number of components by 40% via redesign of EVA spacesuit wrist bearings
- Researched and synthesized crucial technical data for SBIR contract for product development of Life Support System sublimator plates
- Improved Pressure Relief Valve flow reliability while preserving cost and weight through strategic material removal

### **Polymer Exploration Group, LLC – National Science Foundation**

**Ashland, Virginia**

*Engineering Intern*

June – August 2016 & 2017

- Increased product production by 1200% by designing and constructing a new roll-to-roll manufacturing oven
- Conducted and recorded results for over 200 tests of ice-release coating of 10 polymer formulas
- Reviewed test data for accuracy and quality, and prepared short write ups summarizing findings for supervisor
- Co-authored testing report featured in the Journal of Physics

## Leadership and Activities

### **Manufacturing Leader, Formula SAE EV**

Fall 2018 – Spring 2019

- Integrated the electrical systems into chassis for Columbia's first FSAE Electric Vehicle
- Designed, tested, and manufactured drivetrain assembly utilizing Solidworks CAD and Fusion360 CAM
- Fabricated 20 components across various vehicle systems using CNC machinery for the team
- Sourced and assembled components for motor cooling system that met calculated heat output of the motor

### **Buchla 100 Series Synthesizer Restoration Project, Columbia Prof. Vallancourt**

Fall 2017 – Spring 2019

- Restored the functionality of a 1960s modular synthesizer in collaboration with a team of four multi-disciplinary students
- Diagnosed and resolved mechanical issue creating an open circuit on step-sequencer
- Cleaned and restored over 50 of the original electrical components while maintaining historical integrity

### **President/Treasurer/Player, Columbia University Men's Lacrosse Club**

Spring 2017 – Spring 2019

- Secured a 60% budget increase from university administration through a structured proposal describing budget needs and team goals
- Increased player retention by 40% through creation of team values, rules, and club – sponsored social events
- Managed an \$8000 budget involving equipment purchases, game officiating fees, and transportation for away games
- Coordinated logistics for 10 games per season between university officials, visiting teams, and referees
- Organized the interview process for a new coach

## Personal Projects

### **Pressure Sensitive Motorized Skateboard**

January 2021

- Wrote Arduino code to adjust motor speed based on user weight distribution and foot positioning on skateboard
- Sourced motor, batteries, and other components based on required loads and desired speeds

### **RipTide (letsripit.com)**

June 2020–October 2020

- iOS application to help New Yorkers discover cheap bar deals
- Managed user feedback to curate content and enhance user experience and retention

### **SpotVote (spotvote.herokuapp.com)**

April 2020

- Web based album voting application utilizing Spotify API
- Designed custom UI/UX for responsive views on different mobile devices/screen sizes.
- Managed SQL queries to allow user to search database and display top results based on cached votes

### **Subbit (subbit.net)**

October 2019 - February 2020

- Social media web application for users to post about events near subway stops
- Leveraged publicly available data from the Metropolitan Transportation Authority to build a database

## Education

### **Columbia University School of Engineering and Applied Science**

*Bachelor of Science in Mechanical Engineering, Completed May 2019, GPA: 3.1*