SANTIAGO B. HIRSCHMANN

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ENGINEERING EXPERIENCE

Drone Dynamics Lab   **Boston, MA**
Student Researcher   October 2019 – Present
- Worked on MATLAB simulations of drone dynamics to study PID (proportional–integral–derivative) controllers
- Extensively used Simulink to model how different PID settings effect the flight characteristics of a quadcopter

SharkNinja   **Needham, MA**
Mechanical Engineer, Robotics Co-op   January 2020 – August 2020
- Took charge of the design, verification, and implementation of a design change in the air path of a robotic vacuum to solve a problem users were experiencing where debris would clog when they tried to empty the dust cup
- Created a test protocol to accurately simulate the problem found in the field and used it to validate designs that solve a well-defined problem statement
- Leveraged 3D printing, machine shop access, and lab equipment to produce ≈40 prototypes, successfully iterated on the design and then validated and implemented a solution that reduced clogging by 82% and saved consumers an average of 90 seconds per week
- With a cross-functionally global team, specifically in China, I implemented a tool change on time and on budget
- Designed a injection molded snap-fit solution with the potential to save the company $75,000 annually in manufacturing costs after analyzing the robot design using DFM and DFA software
- Designed an improved air path within an autonomous robotic vacuum, created a full CAD model from scratch
- Extensively used issue tracking software to follow an agile project management cycle and keep timelines on track

Smart Mobility Group   **Boston, MA**
Student Researcher   January 2019 – December 2020
- Earned a place as a reviewer for the Transportation Research Board (TRB)
- Co-author of "Transportation Network Company Service Usage in the University Community" submitted to the TRB
  - Here a PHD student and I researched the use of Uber and Lyft by college students and professors
- Acquired funding for, marketed, and implemented a survey on the use of Uber and Lyft in the Northeastern community, amassed 2,500 responses to create the largest data set of its kind in the field of transportation research

Cornerstone of Engineering   **Boston, MA**
Student   September 2018 – May 2019
- Designed, programmed, and successfully built a wearable device that used a pulse oximetry sensor to detect when a user was drowning and alert bystanders by mechanically releasing a bright dye into the water to aid in rescue

EDUCATION

Northeastern University: Honors Program   May 2022 | **GPA: 3.55**

Degrees:	Candidate for Master of Science in Mechanical Engineering with a concentration in Mechatronics Candidate for Bachelor of Science in Mechanical Engineering, Minor in Mathematics
Honors:	Northeastern National Hispanic Scholarship Recipient, Dean's List Student, Presidential Global Scholar
Courses:	Heat Transfer, Control Systems, Graduate Machine Learning and Pattern Recognition (MATLAB), Graduate Microelectromechanical Systems, Mechanics of Materials, Fluid Mechanics, Thermodynamics, Probability & Statistics, Dynamics, Graduate Mathematical Methods, Material Science
Activities:	Northeastern Sailing Team (Co-Captain for 1 term, Vice President for 3 terms), Beta Gamma Epsilon Engineering Fraternity (House Renovation Chair), High School First Robotics team (Captain 2017-18)
Software:	Solidworks, Creo, MATLAB, C++, DFM and DFA software packages (Boothroyd Dewhurst), Atlassian Suite (Jira and Confluence), Microsoft Office
Skills:	Power and hand tools, machine shop equipment, additive manufacturing, DFMEA analysis, machine learning and data analysis, wiring and soldering, design validation
Certifications:	Certified Solidworks Associate (CSWA), National EMT, National Ski patroller, US Sailing Instructor

Interests:	I sail 5 days per week on the sailing team, I love to cook, I enjoy biking and hiking
Volunteering:	Ski Patroller for Vail Resorts, Delivered lifesaving care, stabilization, and transportation of patients at Okemo I have also volunteered for the Ulman foundation, Boston Marathon, and Pilgrim Church
Global:	Fluent in Spanish; American and Austrian Citizenship; Studied abroad in Argentina (2015) and Ireland (2019)