LIAM A. WARD

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EDUCATION

Boston University College of Engineering, Kilachand Honors College, Boston MA
Bachelor of Science, Mechanical Engineering, May 2022
GPA: 3.89, Dean's List, (all semesters) Fall 2018, Spring 2019, Fall 2019, BU College of Engineering

Honors

Distinguished Lutchen Research Fellowship, BU College of Engineering

Relevant Coursework

Fluid Mechanics, Energy and Thermodynamics, CAD and Machine Components, Mechanics of Materials, Electric Circuits, Probability, Statistics, Engineering Design, Differential Equations, Multivariable Calculus, Linear Algebra, MATLAB Programming, Calculus-based Physics, General Chemistry

PROJECTS

"Vehicle Development" BU Rocket Propulsion Group

- Using Solidworks to design end cap for oxidizer tank of liquid-bipropellant rocket featuring common dome.
- Performing structural analyses of bulkhead to ensure proper performance during flight in up to supersonic speed regimes and high pressure, high temperature conditions using Solidworks FEA.
- Derived and performed initial calculations for mass optimized oxidizer tank bulkhead geometry using MATLAB.
- Delivered Conceptual Design Review and Preliminary Design Review to receive feedback on the design process.
- Mentoring first-year group members in the engineering design process.

"High Powered Rocket Competition" BU Rocket Propulsion Group

- Worked on a team of three to design a high-powered rocket from scratch on a fixed budget and schedule.
- Analyzed and optimized the vehicle design using OpenRocket simulation software.
- Designed parts in Solidworks CAD Software.
- Fabricated parts using CNC Laser Cutting.
- Oversaw launch site operations for a successful launch.

EXPERIENCE

Research Assistant 2019 - Present
Boston University College of Engineering Unsteady Fluid Mechanics and Acoustics Laboratory Boston, MA

- Currently working to debug a JR3 force/torque sensor in order to collect data from a quadcopter to inform a model for control of micro aerial vehicles under aerodynamic and physical contact interactions.

Research Intern Summers/Winters 2017 – 2019
Saint Joseph's University Physics Department Philadelphia, PA

- Worked through reviewer comments to revise a pedagogical paper titled "Measuring the Impulse of Sudden Impacts on Foam with Varying Elasticity".
- Utilized various fabrication techniques to redesign and reconstruct the experimental apparatus.
- Used Vernier Force Sensor with Logger *Pro* to generate data which was graphed in MS Excel and was used to analyze the relationship between elasticity of foams and the impulse experienced from varying impacts.
- Used MATLAB to produce a script to manipulate and analyze large datasets.
- Recalled physics knowledge to tackle complex questions from the reviewers and devised new experiments to test hypotheses.
- Authored many revisions of paper which is pending publication.

SKILLS

Computer: MATLAB, Solidworks, Creo Parametric, LaTeX, MS Office, Logger *Pro*, HTML5, CSS, some experience in C and C++
Languages: Conversant in Spanish

ACTIVITIES

Member, BU Rocket Propulsion Group
Peer Mentor, Kilachand Honors College
President/Co-Founder, BU Irish Association
Trained Liturgical Piano Accompanist and Organist