LIAM A. WARD

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EDUCATION

Purdue University, School of Aeronautics & Astronautics — West Lafayette, IN
Master of Science, Aeronautics & Astronautics — Expected May 2024

- GPA: 4.00 / 4.00
- Graduate Research Assistant
- Major in Structures and Materials
- Minor in Aerospace Systems

Relevant Coursework: Mechanical Behavior of Aerospace Materials, Fatigue of Structures and Materials, Finite Element Methods in Aerospace Structures, Multidisciplinary Design Optimization

Boston University College of Engineering, Kilachand Honors College — Boston, MA
Bachelor of Science, Mechanical Engineering — May 2022

- GPA: 3.94 / 4.00; Summa Cum Laude
- Concentration in Aerospace Engineering
- Matthew Isakowitz Fellowship 2022
- Kenneth R. Lutchen Distinguished Research Fellowship

Relevant Coursework: Structural Mechanics, Mechanical Vibrations, Compressible Flow & Propulsion, Dynamics of Space Vehicles, Aircraft Performance & Design

EXPERIENCE

Data Analytics / Modeling & Simulation Engineer — June 2024 – Present
Leidos Dynetics — Crane, IN

- Serve as a task lead, providing technical and nontechnical leadership, supporting government programs focused on materials engineering and manufacturing.

Research Assistant — August 2022 – May 2024
Purdue Hypersonic Advanced Manufacturing Technology Center (HAMTC) — West Lafayette, IN

- Built detailed thermomechanical FEA models in ABAQUS to predict failure of mechanically and chemically bonded joints of dissimilar ceramic matrix composite materials for use as hypersonic leading-edge TPS.
- Used NASA CBAero to generate mechanical and thermal loading conditions on a notional hypersonic boost-glide vehicle and used an indirect OCP solver to optimize trajectories with mechanical and thermal constraints.
- Developed an integrated and automated multi-scale computational analysis toolset to rapidly assess the effects of mechanical tolerances at TPS joints on vehicle performance and mission capabilities.

Aerospace Engineer Intern — May 2022 – August 2022
Hedron — Virtual

- Completed Size, Weight, and Power (SWaP) estimates for a next-generation optical communications payload.
- Managed CAD assemblies, produced optical module layout concepts, and supported trade studies.

Structures Engineer Intern — May 2021 – August 2021
ABL Space Systems — El Segundo, CA

- Completed the conceptual and detailed design of a heatshield closeout panel system to protect the aft end of the first stage of the RS1 orbital launch vehicle from extreme pressure and temperature environments.
- Developed structural analysis models for flight hardware using FEMAP/NASTRAN.
- Created MATLAB script to size TPS required thickness.
- Researched and secured sources for material acquisition and manufacturing.

Intern — December 2020 – February 2021
Inversion Space — Virtual

- Identified requirements and specifications of and sourced components for a high-pressure propulsion fluid testing system and designed support structure for the system.
- Researched and generated critical flight hardware concepts and modeled those concepts with CAD.

SKILLS

Computer: ABAQUS, FEMAP/NASTRAN, ANSYS Mechanical, Siemens NX, Solidworks, Creo Parametric, OnShape, MATLAB, Python

ACTIVITIES

Member, AIAA, Tau Beta Pi
President/Co-Founder, BU Irish Association
Trained Piano Accompanist and Organist