Peter Ha

peterha@bu.edu 857-321-1112 peterha.com linkedin.com/in/peter-ha

Relevant Experience

Rogue Space Systems Corporation / Propulsion Engineer (Full Time) / May 2022 - Present

- Developed a fuel delivery system for a hall effect thruster for a NSF grant, sublimating a slug of solid metal using cartridge heaters without melting the slug or overheating the heaters. This system is designed in SolidWorks and simulated in Ansys Mechanical.
- Leading a project to design a 6-DoF resistojet RCS module integrated into an ion thruster, using a single tank of water, creating a highly capable propulsion module for station-keeping and proximity operations with minimal additional system complexity. As project stakeholder, I define requirements working with the mission operations team to find viable performance
- Planned and simulated mission concepts in STK and GMAT to define system requirements for propulsion system performance, determining necessary thrust, total impulse, and other parameters to accomplish operational goals.
- Served as principal investigator on a Phase I SpaceWerx STTR investigating novel applications for location and orbital propagation on autonomous satellites not reliant on GPS. Liaised academic and industry partners to develop a proof-of-concept MATLAB simulation environment.
- Designed numerous brackets and mechanical interfaces for a client payload in SolidWorks, and simulated stresses in Ansys Mechanical to meet launch provider requirements for environmental testing and qualification.

Boston University Rocket Propulsion Group / Vice Director, Engine Development Lead, Engine Development Engineer / September 2018 - May 2022

- Designed liquid bipropellant injectors on an extremely small budget, designing for a rapidly iterating prototype test campaign of small scale ablative engines.
- Redesigned past injector for flight, dramatically cutting cost and complexity by focusing on DRM.
- Pivoted from a new engine architecture towards iterating on a proven heritage, streamlining our testing timeline with a heavy focus on reducing cost, manufacturing difficulty, and system complexity.

Education

Boston University / Bachelor of Mechanical Engineering / Class of 2022

Relevant Coursework: Mechanical Vibration, Compressible Flow and Propulsion, Aerodynamics, Space Vehicle Dynamics, Aircraft Performance and Design, Measurement and Instrumentation, Heat Transfer, Fluid Mechanics, Energy and Thermodynamics, Manufacturing Processes, Mechanics of Materials, Materia Science, Electric Circuits, Probability Statistics and Data Science, Computational Linear Algebra.

Skills

Design Skills

Rapid prototyping and iteration, design for manufacturing, design for assembly, rocket propulsion

CAD & Simulation Software

SolidWorks, SolidWorks FEA, Solidworks Flow Analysis, Ansys Mechanical, Systems Tool Kit, General Mission Analysis Tool

Programming Languages

MATLAB, Python 3

Manufacturing

Manual and CNC mills, manual and CNC lathes, additive manufacturing, GibbsCAM

Awards

Boston University / Best ECE Senior Design Project / May 2022

- Designed and manufactured PUCKFish, a low cost instrumentation package for lobster trappers.
- Selected by a panel of alumni judges to be the project most ambitious in its goals and most successful in achieving them, while remaining user friendly and highly practical.

Boston University / ECE Shark Tank Winner / October 2021

- Pitched PUCKFish to a panel of alumni judges which deliberated based upon the project's viability, marketability, and engineering success.
- Won first place against a group of ten competing student design groups.