Benjamin Kamer

bkamer@bu.edu | 310-490-4470 | Los Angeles, CA | bkamer.space

EXPERIENCE

Reflect Orbital **May 2025 – Present**
Engineering Intern Los Angeles, CA

- Responsible for design, simulation, and qualification of all satellite primary structures
  - Conducted thermal analysis of components within satellite bus, meeting challenging requirements imposed by large reflector
  - Redesigned satellite structures, optimizing for stiffness and reducing weight by 30%
  - Created first flight qualified design in company history, meeting SpaceX rideshare requirements
  - Conducted quasi-static and Ansys based modal and harmonic launch environment analysis

Physical Sciences, Inc. **May 2024 – Aug 2024**
Propulsion & Energetics Intern Epping, NH

- Designed feed system for 1st of-its-kind 1000 pound-force flight rotating detonation rocket engine
  - Designed and analyzed valve assembly utilizing COTS valves and actuators to reduce cost, system complexity, size, and to ensure timelines were met
  - Sized, selected, and sourced all feed, purge, and pneumatic components for all engine fluid systems
  - Analyzed impact of altitude on likelihood of ignition for a compact augmented spark igniter
- Designed and analyzed solid propellant gas generator for use in air breathing engine
  - Developed a solid fuel grain geometry and combustion characteristics simulation software, proving feasibility of a novel gas generator in an existing air breathing engine
- Assembled, tested, and analyzed tests of experimental liquid rocket engines
  - Analyzed components and perform closeouts of all major engine systems
  - Loaded and conditioned liquid oxygen and kerosene into test stand shortly before test
  - Modified and ran SOPs for firing of engines, igniters, and subcomponents
  - Performed post-firing analysis of engine and provide findings to improve future engine design

Boston University Rocket Propulsion Group **Sep 2022 – Present**
Director & Fluids/Prop Lead, Previously Vice Director, Red Team Lead Boston, MA

- Responsible for a large portion of the team's major projects, as well as manage over 100 members
- Responsible Engineer for Bipropellant Rocket Propulsion & Feed System
  - Serve as Launch & Test Director for team's first liquid rocket to fly in 21-year history
  - Set record for most thrust of any collegiate liquid rocket to fly
  - Planned & ran launch and tests, designed autosequences, analyzed performance, inspected fluids systems after tests, verified performance, and set ignition timing
  - Set all DAQ requirements for the rocket while in static test and in flight
  - Monte Carlo dispersion, trajectory, and expected performance analysis of rocket
  - Designed, built, and tested all fluids components on both the rocket and ground service equipment, working with structural and avionics teams to ensure compatibility
  - Minimized complexity & optimized vehicle architecture, ensuring vehicle remained
- Overhauled the team's Horizontal Test Stand to support cryogenic propellants
  - Modify and test COTS ball valves to support cryogenic propellants, reducing cost by 10 times
- Wrote and ran test SOPs for 2,500 lbf liquid rocket engine test stand

EDUCATION

Boston University **Sep 2022 – May 2026**
Bachelor's Degree in Mechanical Engineering, 3.5 GPA, Dean's List Boston, MA

Skills

CAD, CAM, ANSYS, Fluids Systems Design, Cryogenic Systems Design, Visio, FEA, Test Engineering, 3D Printing, Python, DAQ, SMC-S-016, SMC-S-025, Hazardous & Cryogenic Operations