

Atharv Biju Pillai

(408) 838-3584, atharvb@bu.edu, [LinkedIn](#), [atharvbp.space](#)

EDUCATION

Boston University, Boston, MA
Bachelor of Science in Mechanical Engineering

May 2026
GPA: 4.0/4.0

Relevant Coursework: Fluid Mechanics, Dynamics, Mechanics of Materials, Thermodynamics, Differential Equations, Multivariable Calculus, Linear Algebra, Probability Statistics and Data Structures

SKILLS

Computer Aided Design (SolidWorks), Microcontrollers (Arduino), Programming Languages: Advanced: MATLAB, Python. Proficient: C++, Java.

HIGHLIGHTED PROJECTS & EXPERIENCE

Boston University Rocket Propulsion Group

Sep 2023 - Present

Propulsion Engineer

- Co-led Hybrid Introduction Project (HIP) for incoming members, provided feedback for design reviews, held office hours to solidify participants' grasp of fundamental rocketry concepts
 - Designed and analyzed carbon steel pintle injector for 600 lbf bipropellant (IPA/NOx) rocket engine
 - Adapt injector design dimensions from test-stand to bipropellant rocket for flight, further experimentation with integration of tangential fuel/oxidizer inlets
 - Designed, printed, and fired a resin nozzle for hybrid (Paraffin/GOx) rocket engine
 - Designed and printed component cover for D-subminiature connector
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Fluid System Simulation Software

Sep 2024 - Present

Personal Project

- Create MATLAB software that graphs 3-D plot of bipropellant fluid system using matrix inputs for: valve placement, pipe length, pipe material, line specification (fuel, oxidizer, purge)
 - Strengthen understanding of fluid flow and computational engineering
 - Return: table of pressure drops across each valve, head losses across pipes using Darcy-Weisbach equation, final pre-injector pressure
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Gait Tracker

Sep 2024 - Present

EK210: Introduction to Engineering Design

- Create Bluetooth device that tracks walking gait of patient, records data for physician's analysis
 - Record heel-toe impacts using FSR pressure sensor, create calibration curve to translate resistance readings to force values using known weights
 - Collaborate with fellow engineers and clients to clarify design requirements and constraints
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Truss Simulation Software

July - August 2024

EK301: Mechanics 1

- Created MATLAB software that graphs and simulates the effect of a point load on an acrylic truss and returns the tension/compression present in each member as a result of the load
 - Returned: critical max load that can be applied to the truss prior to buckling
 - Experimental percent error for critical load measurement: 4.28%
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AWARDS

National Awards

May 2023

Award Recipient

- AP Scholar with Distinction
- President's Award for Educational Excellence
- National Merit Scholarship Letter of Commendation
- AP Scholar with Honor