PEDRO TAPIA ZAMORA

ptapiaz@bu.edu | (702) 272-7981 | LinkedIn | Project Portfolio | Boston, Massachusetts

EDUCATION

Boston University Boston, MA
Bachelor of Science, Mechanical Engineering May 2028

- GPA: 3.51/4.00 (Dean's List)
- Concentration in Energy Technologies & Sustainability, Minor in Mathematics

PROFESSIONAL EXPERIENCE

Public Service Intern | Nevada Department of Transportation Las Vegas, NV | May - Aug 2026

- Executed tensile and compressive testing on rebar and concrete respectively to verify PSI strength compliance.
- Implemented QA inspections across drainage and structural systems on a 20-mile highway rehabilitation project.
- Verified in-field structural material according to NDoT's specifications for public safety.

Research Assistant | Heejin Cho's Lab at UNLV Las Vegas, NV | May - Aug 2026

- Deployed a surface-angle sensor for Heliostat mirror optimization at Ivanpah Solar Facility for data collection.
- Calculated and applied offset-correction algorithms to correct over 400 points of raw data.
- Developed a PV-Battery-Load emulator to test HVAC energy management at a reduced 37% platform cost.

PROJECTS

Water Distribution System Design, Boston University Global Engineering Brigade Jan - May 2026

- Geologically mapped 100+ acres of land to identify ideal piping placement and account for elevation differences.
- Surveyed 80+ residents across a rural community to assess water needs and perform water quality exams.
- Utilized EPANET to analyze water behavior in a pressurized piping network to achieve a favorable flow rate of 5 gallons per minute.

Rocket Nozzle, Boston University Rocket Propulsion Group Sept - Dec 2025

- Designed a bell nozzle in SolidWorks optimized for thrust efficiency at a design altitude of 10,000 feet.
- Manufactured and static fired rocket nozzle to verify its performance characteristics.
- Performed Finite Element Analysis to analyze the behavior of the nozzle under a thrust load with SolidWorks FEA.

OTHER EXPERIENCE

Resident Assistant | Boston University Residence Life Boston, MA | Aug 2025 - Present

- Oversaw 600+ residents during on-call shifts and managed crises with discretion.
- Arranged 20+ educational and social events to promote physical and mental wellness.
- Supervised 55 residents and supported their transition into college through individualized mentorship.

Recreation Assistant & Lead Captain | Walnut Recreation Center Las Vegas, NV | Jun 2022 - Aug 2026

- Coordinated facility reservations and class scheduling across multiple daily recreation programs.
- Structured and supervised daily activities for 20+ children ages 5–12, focusing on skill development.
- Streamlined an Excel tracking system to organize and manage 150+ program participants.

SKILLS

Manufacturing: Drill Press, Laser Cutting, Water-Jet Cutting, 3D Printing, CNC Machining, and Manual Mill.
Software: MATLAB, Python, SolidWorks, OnShape, Revit and Microsoft Excel.
Relevant Coursework: Fluids Mechanics, Thermodynamics, Mechanics of Materials, and Clean Energy Generation.

LEADERSHIP & AFFILIATIONS

Global Engineering Brigade, President & Past Director of Fundraising Sept 2024 - Present

- Managed a 40+ member club through fundraising a humanitarian trip to Honduras and Guatemala.

Rocket Propulsion Group, Fluids & Structures Member Sept 2025 - Present

- Machined flight hardware for a student-developed liquid bipropellent rocket engine.

Nevada Boys State, Judicial Coordinator & Senior Counselor Jul 2023 - Aug 2026

- Counseled 100+ High School students through a civic leadership program that simulated Nevada's government.