

# Jayden Ma

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## EXPERIENCE

**Physical Sciences Inc. (PSI), Andover, MA**

**June 2021 - Present**

Propulsion & Energetics Engineering Intern

- Designed, assembled, and tested hypergolic engine test stand fluid systems for analysis of UDMH/NTO plumes
- Built fluid system and data acquisition for hotfiring of rotating detonation rocket engine with novel nozzle designs
- Streamlined future rocket motor research by designing shaker table and strand cutter tools for propellant casting
- Sourced components and designed ingress protection test stand for low-cost EOD device to be commercialized

**GE Aviation, Lynn, MA**

**Jan. - May 2021**

Fuel Systems Test Engineering Co-op

- Tested fuel metering unit for NPI turboshaft engine using SCADA controls to reach full T901 engine testing by Q4
- Led and designed quality test of turboprop oil coolers to provide on-time delivery of 17 F414 aircraft engines
- Learned to setup/maintain fluid systems by reading P&IDs and installing components as designed by customers

**Boston University Rocket Propulsion Group (BURPG), Boston, MA**

**Mar. 2019 - Present**

Lead Fluid Systems Engineer

- Developed fluid systems on team's first liquid rocket (Pursuit) powered by record-breaking 2500 lbf engine
- Led design and testing of engine feed system and co-designed gas generator cycle for liquid rocket
- Collaborated with other leads to design systems interfacing and plan test campaign to launch in summer 2022

## EDUCATION

**Boston University College of Engineering, Boston, MA**

**May 2022**

Bachelor of Science in Mechanical Engineering (Concentration in Aerospace Engineering)

Cumulative GPA: 3.73/4.00

**Coursework:** Compressible Flow & Propulsion, Space Vehicle Dynamics, Aircraft Performance & Design, Fluid Mechanics, Mechanics of Materials

## PROJECTS

**"Liquid Rocket Engine Feed System," BURPG Project**

**Jan. 2021 - Present**

- Finished design of pressurization & feed system delivering pressurized bipropellants for nominal engine thrust
- Led re-design of P&ID, component selection, pressure budget, & routing CAD after 2021 major vehicle changes
- Oversaw and advised routing assembly plan, component testing operations, and vehicle launch operations
- Designed and built test stand to quantify pressure drops through component testing of COTS parts

**"Liquid Rocket Gas Generator System," BURPG Project**

**Sept. 2019 - Jan. 2021**

- Co-designed gas generator cycle that increases efficiency of feed system and decreases vehicle mass by 160 lbf
- Modeled chamber and heat exchanger CAD given simulated thermal-structural loads to prevent component failure

**"COVID-19 Mask Dispenser," Product Design Class Project**

**Sept. - Dec. 2020**

- Developed and prototyped contactless mask dispenser as novel product for contemporary issue with team of 4
- Designed housing and geared roller mechanism using calculations for friction, torque, and gearing
- Led coding of emptiness & activation sensors and manufactured three prototypes for design reviews

**"F-Class Model Rocket," Personal Project**

**July - Sept. 2019**

- Designed and additively manufactured F-class motor model rocket in OpenRocket & Solidworks
- Learned machining and designed circuits to build launch pad, launch controller, and recovery system
- Simulated to apogee of 1000 meters and max speed of Mach 1

**Additional Projects:** Feminine Hygiene Product Dispenser, C# Kinect Game, Smart Glasses

## SKILLS

**Engineering:** Solidworks, CREO, ANSYS, Machine Shop, 3D Printing, Arduino, P&ID, HMI/SCADA, AutoCAD, Circuit Design

**Computer:** Python, Excel/VBA, MATLAB, C, HTML, Photoshop, Visio

**Language:** Fluent in Chinese (Cantonese), conversational in French

## LEADERSHIP & HONORS

**College of Engineering Dean's List**

**Spring 2019 - Fall 2020**

**EK100 Freshman Student Advisor:** Boston University College of Engineering

**Aug. 2020 - Present**

**Clarinet Section Leader:** Boston University Marching Band

**Aug. - Dec. 2020**