

# Jayden Ma

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## EXPERIENCE

**Physical Sciences Inc., Andover, MA**

**June 2021 - Present**

Propulsion and Energetics Engineering Co-op

- Designed, assembled, tested, and hotfired hypergolic propulsion test stand for hydrazine plume analysis
- Built fluid system and visual data acquisition for rotating detonation rocket engine resulting in successful hotfiring
- Streamlined all future rocket motor research by designing shaker table and strand cutter for propellant casting
- Sourced components and designed ingress protection test stand for explosives ordnance disposal aiming device

**GE Aviation, Lynn, MA**

**January - May 2021**

Fuel Systems Test Engineering Co-op

- Tested fuel metering unit of NPI turboshaft with automated test controls to validate component for engine testing
- Led and redesigned quality test of production oil coolers assisting in on-time delivery of 17 F414 jet engines
- Learned to setup/maintain fluid systems by reading P&IDs and installing fluids components according to test plan

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

**March 2019 - Present**

Lead Fluid Systems Engineer

- Developed and tested fluid systems on team's first liquid rocket powered by 2500-lbf N2O/IPA engine
- Led design and test planning of engine feed system and co-designed gas generator cycle for the liquid rocket
- Collaborated with other technical leads for systems interfacing and to plan launch operations for 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 Design, Fluid Mechanics, Structural Mechanics, Thermodynamics

## PROJECTS

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

**January 2021 - Present**

- Completed design of pressurization & feed system delivering pressure-fed bipropellants for nominal engine thrust
- Led redesign of P&ID, component selection, pressure budget, & routing CAD after overall vehicle was redesigned
- Advised and finalized decisions for system assembly plan, component testing operations, and launch operations
- Designed and built N2-pressurized water test stand to record pressure drops through coldflow component testing

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

**September 2019 - January 2021**

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

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

**September - December 2020**

- Developed and prototyped a contactless mask dispenser as a novel product tackling global contemporary issues
- Co-designed housing and geared roller dispensing mechanism using calculations for friction, torque, and gearing
- Led programming of emptiness and activation sensors & manufactured 3 prototypes for design reviews

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

**July - September 2019**

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

**Other Projects:** TVC Aerospike Nozzle, Gaseous Rocket Engine Test Stand Build, Smart Feminine Products Dispenser, C# Kinect Game

## SKILLS

**Engineering:** Fluid Systems, Propulsion, Test Automation, Mechanical Design, P&ID, Machining, Additives, Circuits

**Programs:** Solidworks, ANSYS, LabVIEW, Python, Excel/VBA, MATLAB, C, HTML, Photoshop, Visio, Arduino

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

## LEADERSHIP & HONORS

**College of Engineering Dean's List**

**Spring 2019 - Fall 2020**

**EK100 First-Year Student Advisor:** Boston University College of Engineering

**August 2020 - Present**

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

**August - December 2020**