

Yong Ji

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Education

Rice University

Expected May 2029

B.S. in Mechanical Engineering | GPA: 3.82

Technical Skills

CAD: SolidWorks, Fusion 360, Creo Parametric

Analysis: ANSYS, COMSOL Multiphysics, MATLAB, Mathematica, finite element analysis (FEA)

Programming and Hardware: Python, C++, Java, Arduino, circuit integration, instrumentation

Engineering Experience

SEED Engineering Intern | Rice University OEDK

Jun - Jul 2026

- Converted a 3D printer into an automated, remotely controlled Bayou Water Sampler for water-quality monitoring.
- Designed and tested the Padgett Insert, a smart pill-bottle insert that tracks medication dispensing to support adherence monitoring.

Propulsion Fluid Systems Lead | Rice Eclipse Rocketry

Sep 2025 - Present

- Lead development and testing of fluid-delivery systems for two liquid rocket engines; coordinate design, component integration, manufacturing support, and test preparation.
- Designed and tested injectors and fuel-grain geometries for the Proxima hybrid rocket engine.

Powertrain Team Member | Rice Racing

Jan 2026 – Sep 2026

- Designed engine-intake geometry using CAD and finite element analysis.

Engineering Projects

Liquid Rocket Engine Injector Test Bed | Rice EDES 300

In Progress

- Designed a test bed in CAD to evaluate injector spray patterns for Rice Eclipse's liquid rocket engine.
- Performed finite element analysis (FEA) to assess factors of safety under different load cases and test environments.

Active Flight Stabilization Test Rig | Rice EDES 120/200

Sep 2025 - May 2026

- Designed and fabricated a portable platform to test rocket flight-stabilization hardware; developed a mechanism providing commanded pitch and yaw while permitting free roll.
- Derived calculations translating pitch and yaw commands into linear-actuator positions and integrated Arduino-controlled motor drivers.
- Tested the rig under static and vehicle-mounted conditions at speeds up to 105 mph.

High-Power Rocketry | Personal Project

2023 - 2025

- Developed and tested solid rocket motor propellants through iterative design, static firings, data collection, and performance analysis.
- Built and launched three high-power rockets; earned Tripoli Level 1 High-Power Rocketry Certification.

Research Experience

Magnetic Levitation Dynamics and Stability | Student Researcher

2024 - 2025

- Designed and built a custom test stand and measurement system to characterize nonlinear magnetic-levitation dynamics and equilibrium stability.
- Authored a research paper awarded Second Prize in the Qiu Chengtong Middle School Science Competition.