

Justin Pai

Flushing, NY • jtpai220@gmail.com • (718) 640-5332

EDUCATION

The Cooper Union for the Advancement of Science and Art

Expected Graduation May 2028

Bachelor of Science in Mechanical Engineering

Manhattan, NY

GPA: 3.6

Relevant Courses: Fluid Dynamics, Computer-Aided Engineering, Mechanics of Materials, Thermodynamics, Dynamics

EXPERIENCES

L3Harris Technologies

June 2026 -August 2026

Systems Engineer 1 (Contract via ProServicesCorp)

Clifton, NJ

- Authored and refined 10 Contract Data Requirements Lists (CDRLs) for an aircraft modernization program.
- Utilized IBM DOORS to track system requirements and maintain documentation compliance within an Agile engineering framework.

Cooper Union Summer STEM

June 2025 - August 2025

Teaching Assistant

Manhattan, NY

- Mentored 30+ high school students in engineering fundamentals, providing hands-on instruction in 3D printing, laser cutting, and Arduino programming.
- Coached a student team through iterative CAD design and prototyping, guiding them to a first-place finish in a judged competition.

PROJECTS

Ejector Seat Mounting Assembly - L3Harris Technologies

- Designed a mounting assembly, including a structural bracket and supporting hardware, to secure the ejector seat to the navigation station's support rails
- Modeled components in Creo Parametric, applying Design for Manufacturability (DFM) principles to optimize machining efficiency and ensure proper fit with existing airframe supports.

Mechanical Rectifier - EID 103

- Designed and fabricated a mechanical rectifier to convert non-uniform rotational input into uniform rotational output, reducing fluctuation by 90%.
- Developed a custom gear system and spring-activated lever, modeling components in Onshape and utilizing rapid prototyping to validate smooth motion transfer and reliability.

Sun-Tracking Solar Panel – EID 101

- 3D modeled and fabricated a prototype sun-tracking solar panel system utilizing linear actuators to automate the panel's movement based on the sun's position.

Stepper Motor Lift – ME 211

- Constructed a motorized lifting mechanism using a NEMA 17 stepper motor with a 6:1 gear reduction to generate sufficient torque to reliably lift a 5-lb load.

EXTRACURRICULAR ACTIVITIES

Cooper Union Motorsport

November 2024 - Present

Member

Manhattan, NY

- Machined 8 custom aluminum accumulator components on a manual mill, revising the original design to achieve ± 0.01 " tolerance for precision fitment on the electric race car

SKILLS

- CAD: Creo Parametric, SolidWorks, AutoCAD, Onshape
- Fabrication: 3D printing, Laser Cutting, Machining
- Programming: Python, C
- Software: IBM DOORS, Agile, Matlab, ANSYS