

JUSTIN CHEN

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EDUCATION

THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART

Bachelor of Engineering in Mechanical Engineering

New York, NY

Expected May 2028

- New York Merit Scholarship for Academic Excellence
- Dean's List (2024 – 2025); GPA: 3.92/4.0

EXPERIENCE

THE PENGUINEERING TEAM

New York, NY

Mechanical Design Intern

October 2025 – December 2025

- Standardized full-scale penguin robot assemblies in SolidWorks to address servo interference
- Validated and implemented mass properties into CAD to simulate the robot's center of mass
- Generated 3D-printable biomechanical components by importing CT scan-derived models into Meshmixer and SolidWorks
- Refined lower-limb and foot geometry to increase step length and improve walking kinematics

Research Intern

July 2023 – August 2023

- Analyzed gait patterns of prototype penguin robots, identifying changes regarding bipedal stability
- Modeled robotic penguin body parts in Onshape; reduced weight by 20% and enhance gait
- Assembled a miniature robot, achieving successful operation for the first time in 3 years

ECOLIBRIUM

New York, NY

Project Intern

March 2025 – August 2025

- Engineered a low-cost monitoring system for 20A load, to calculate RMS current and export data
- Embedded Lepton 3.5 camera with Raspberry Pi, supporting live thermal video and screenshots
- Optimize thermal data accuracy by ~55% through systematic calibration and iterative debugging
- Wired ESP32 systems integrated with SEN66 sensors for environmental data collection
- Developed firmware in Python and C++ to receive sensor inputs and display real-time telemetry

AVIATION MAINTENANCE TECHNOLOGY

New York, NY

Aviation Maintenance Technician

September 2020 – June 2024

- Led shop operations by scheduling class time and directing workflow efficiency as Class Foreman
- Overhauled reciprocating engines and manufactured sheet metal and composite aircraft parts
- Performed various inspections and maintenance procedures on aircraft to validate airworthiness
- Maintained accurate documentation of repairs and inspections for compliance and safety records
- Instructed 15+ classmates on proper procedures, tool usage, and PPE to maintain safety

PROJECTS

MECHANICAL RECTIFIER

January 2025 – May 2025

- Designed and modeled a mechanical rectifier through Onshape to convert oscillating rotation into constant rotation using a flyball governor and flywheel system
- Quantified performance using Tracker Video Analysis and Arduino IDE to measure effectiveness
- Iterated multiple designs for system optimization; reduced angular rotation fluctuations by 18 dB (or approximately 87%) with 6-9V power inputs

SKILLS

Skills: Mechanical Design, Manufacturing (Machining, Fabrication), Python, C, Arduino

CAD: AutoCAD, Onshape, Solidworks, Meshmixer

Languages: English (fluent), Mandarin (fluent)

Certifications & Training: Career and Technical Endorsement (NYSED)