

JUSTIN CHEN

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EDUCATION

THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART

New York, NY

Bachelor of Engineering in Mechanical Engineering

Expected May 2028

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

EXPERIENCE

ECOLIBRIUM

New York, NY

Project Intern

March 2025 – August 2025

- Engineered a low-cost monitoring system for 20A loads, to calculate RMS current and export data
- Integrated Lepton 3.5 camera with Raspberry Pi, supporting live thermal video and screenshots
- Enhanced 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 classmates on proper procedures, tool usage, and PPE protocols to maintain safety

APPLIED DYNAMICS AND OPTIMIZATION LABORATORY

New York, NY

Research Intern

July 2023 – August 2023

- Analyzed gait patterns of penguin-inspired robots, identifying design changes for bipedal stability
- Modeled robotic penguin body parts in Solidworks; reduced weight and improved gait efficiency
- Assembled a stable-framed robot, achieving successful operation for the first time in 3 years
- Presented research findings and accomplishments at NYU's colloquium and AMNH's symposium

PROJECTS

VENDING MACHINE

June 2025 – Present

- Build a small, prototype vending machine with automated dispensing and sensor feedback
- Fabricate the wooden frame, ensuring components are cut and fitted for dispensing functionality
- Configure the full circuit using a microcontroller, push buttons, infrared sensors, and servo motors

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 velocity fluctuations by 18 dB (or approximately 87%) with 6V power inputs

SKILLS

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

CAD: AutoCAD, Autodesk Inventor, Onshape, Solidworks

Languages: English (fluent), Mandarin (fluent)

Certifications & Training: Career and Technical Endorsement (NYSED)