

# JUSTIN CHEN

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## EDUCATION

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### THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART

New York, NY

*Bachelor of Engineering in Mechanical Engineering, Expected 2028*

Sep 2024 – Present

- Honors; New York Merit Scholarship for Academic Excellence
- GPA: 3.9/4.0

## EXPERIENCE

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### ECOLIBRIUM AT LOISAIDA

New York, NY

*Project Intern*

Mar 2025 – Current

- Design a custom plug load monitoring solution using a current transformer, relay, and ESP32 to measure 20 A loads, calculate RMS current, and export data
- Integrate Lepton 3.5 camera with Raspberry Pi, supporting live thermal imaging and screenshots
- Enhanced thermal data accuracy by ~55% through systematic calibration and iterative debugging
- Wire and solder ESP32 systems integrated with SEN66 sensors for environmental data collection
- Develop firmware to receive sensor inputs and display real-time telemetry on microcontrollers

### AVIATION MAINTENANCE TECHNOLOGY

New York, NY

*Aviation Maintenance Technician*

Sep 2020 – Jun 2024

- Managed shop operations by coordinating class time and ensuring productivity as Class Foreman
- Overhauled reciprocating engines and fabricated 10+ projects to reinforce aviation concepts
- Instructed classmates on proper procedures, tool usage, and PPE protocols to maintain safety
- Performed various inspections and maintenance procedures on aircraft to validate airworthiness
- Maintained accurate documentation of repairs and inspections for compliance and safety records

### ARISE AT NYU TANDON SCHOOL OF ENGINEERING

New York, NY

*Research Apprentice*

Jul 2023 – Aug 2023

- Researched how differences in a penguin's anatomical structure impact their stability and gait
- Modeled robotic penguin body parts in Onshape, reducing weight to improve movement 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

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### MECHANICAL RECTIFIER

Jan 2025 – May 2025

- Conceptualized and modeled a mechanical rectifier idea through Onshape to convert oscillating rotation into constant rotation using a flyball governor and flywheel system
- Analyzed performance using Tracker Video Analysis and Arduino to quantify system effectiveness
- Iterated multiple design versions for performance, reducing angular velocity fluctuations by 18 dB

### VENDING MACHINE

Jun 2025 – Aug 2025

- Construct a small-scale vending machine that includes the frame, shelves, and motor mounts
- Configure the full circuit system using push buttons, infrared sensors, and servo motors
- Program Arduino to handle user input, item selection, item dispensing, and display output

## SKILLS

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**Technical Skills:** Microsoft Suite, AutoCAD, Onshape, Arduino, Raspberry Pi, Python, C

**Languages:** English, Mandarin

**Certifications & Training:** Career and Technical Endorsement (NYSED)

**Awards:** AP Scholar with Honor

**Interests:** New York Knicks, Food crawls, 3D Printing