

# 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 May 2028*

- New York Merit Scholarship for Academic Excellence
- Honors; GPA: 3.92/4.0

## EXPERIENCE

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### 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 fabricated sheet metal and composite aircraft components
- 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 Onshape; 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

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### 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

## SKILLS

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**Technical Skills:** AutoCAD, Autodesk Inventor, Onshape, Arduino, Raspberry Pi, Python, C

**Languages:** English (native), Mandarin (advanced)

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

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