

# Jaeho Cho

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## Education

### The Cooper Union for the Advancement of Science and Art

New York City, NY

*Bachelor of Engineering in Electrical Engineering, Bioengineering Minor*

Aug 2022 – May 2026

- Half Tuition Scholarship | Myron Coe Scholarship | Full Tuition Scholarship 2025-2026
- “Courses: Machine Learning, Digital Signal Processing, Communication Theory, Hardware Design, Electronics, Data Structures & Algorithms, Computer Architecture, Linear Algebra, Ordinary & Partial Differential Equations, Probability”

## Work Experience

### Data and AI Intern | Hanwha TotalEnergies Petrochemical

May 2024 – Aug 2024

PWC • Seoul, South Korea

- Developed and optimized advanced time-series forecasting models using GluonTS, Chronos, and Darts to generate actionable price predictions for flagship petrochemical products, enabling data-driven decision-making.
- Refactored backend data pipelines, transitioning from MongoDB to ClickHouse and improving data flow efficiency.
- Built a web backend for business analysts, automating the aggregation of news and articles via APIs and integrating LLM-driven sentiment analysis with aforementioned forecasting models to enhance market insights.

### Teacher Assistant | Design and Drawing

Jun 2023 – Aug 2023

The Cooper Union • New York, NY

- Taught 24 high school students the fundamentals of engineering design, circuit design, Arduino and Onshape CAD.
- Led workshops on Arduinos and circuit design, culminating in students building 3D printed 4-DoF robotic arms.

## Extracurricular Activities

### Founder/President | The Pre-Medical & Pre-Dental Society

Sep 2024 – Present

- Established a support network for pre-medical/dental students, bridging gaps in guidance at the Cooper Union.
- Coordinated events including a blood drive that attracted 40 donors and resulted in 37 blood donations, as well as alumni networking sessions that facilitated connections between students, medical school attendees, and professionals.

### Project Lead | Bioengineering Vertically Integrated Projects

Sep 2022 – Present

- Building open-source robotic arms for compliant human interaction, leveraging Mediapipe and OpenCV for real-time pose detection and integrating ROS2 for seamless control logic and interfacing with the OpenMANIPULATOR-X system.
- Simulated pose mimicking systems in Gazebo, using MoveIt2 & ros2\_control for collision detection and motion planning.
- Designed & fabricated a custom PCB for an eTextile sensor, presented at the 2024 ASTM International Exo Games.

### Research Assistant | Mechanical Exposure Study

Feb 2024 – Aug 2024

- Spearheaded the analysis of Xsens IMU data using MATLAB to quantify mechanical exposure in industrial workers.
- Implemented an automated pipeline for data collection, labeling, and analysis, streamlining the research process.

### Shadow | Dr. Steve Doh (Anesthesiologist)

Jun 2023 – Jul 2023

- Observed medical procedures, including endoscopies, laparoscopies, orthopedic surgeries, and open surgeries.
- Gained insight into the integration of advanced technology in surgeries, including the Da Vinci surgical system.

## Skills

- **Programming:** Python, MATLAB, Rust, C, C++, Verilog, VHDL, Git, Docker, Django, SQL
- **Software:** Virtuoso, LTspice, Altium, Vivado, ROS2, Gazebo, Blender, Onshape, Fusion360, Inventor
- **Certification:** NYS EMT, CPR

## Projects

### Differential to Single-ended Amplifier

Nov 2024 – Dec 2024

- Designed schematic and layout using Virtuoso, performed layout-versus-schematic (LVS) and design rule check (DRC).

### 32-bit Pipelined MIPS Processor

Sep 2024 – Oct 2024

- Designed, implemented and simulated the processor in Vivado, achieved full positive slack with a clock period of 14 ns.

### **Prosthetic Hand**

*Aug 2021 – Sep 2023*

- Designed and built a 6-DoF myoelectric prosthetic hand with a friend who has a congenital left-hand anomaly (acheiria).