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: Frequentist Machine Learning, Digital Signal Processing, Communication Theory, Computer Architecture, Integrated Circuit Engineering, Theoretical Neuroscience, Medical Imaging, Bio-Instrumentation & Sensing

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 utilizing GluonTS, Chronos, and Darts Python libraries to generate price predictions for flagship petrochemical products with a 3-month forecasting horizon.
- Refactored backend data pipelines in Django, transitioning from MongoDB to ClickHouse and improving performance.
- Developed a web backend that automates news and article aggregation via private and public APIs, algorithmically integrating forecasts and market indicators to enhance LLM-driven sentiment analysis and deliver actionable insights.

Teacher Assistant | Design and Drawing — Jun 2023 – Aug 2023
The Cooper Union • New York, NY
- Instructed 24 students in engineering design fundamentals, circuit design, Arduino programming, 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
The Cooper Union • New York, NY
- Established a support network for pre-medical and pre-dental students, bridging gaps in guidance at Cooper Union.
- Organized and led events, including a blood drive that resulted in 37 whole blood donations, and alumni networking sessions that successfully connected students with current medical school students and healthcare professionals.

Project Lead | Bioengineering Vertically Integrated Projects — Sep 2022 – Present
The Cooper Union • New York, NY
- Building open-source robotic arms for compliant human interaction, using Mediapipe and OpenCV Python libraries for pose landmark detection and ROS2 for the kinematic mapping of joint positions to the OpenMANIPULATOR-X system.
- Simulated pose mimic systems in Gazebo using MoveIt2 and ros2_control for collision detection and motion planning.
- Designed and fabricated a PCB in Altium for an eTextile sensor, presented at the 2024 ASTM International Exo Games.

Research Assistant | Mechanical Exposure Study — Feb 2024 – Aug 2024
Mount Sinai • New York, NY
- Developed data-processing pipelines in MATLAB and Python to interpret quaternions from IMUs, analyzing the mechanical stress on joints, with the considerations of subtle rotations like the supination and pronation of the forearm.
- Refined the methodology and analysis of the study, introducing an algorithmic labeling system that parsed complex physical tasks into more precise categories, allowing for the separate assay of concentrated movements and tasks.

Shadow | Dr. Steve Doh (Anesthesiologist) — Jun 2023 – Jul 2023
St. Joseph's Medical Center • Yonkers, NY
- Observed medical procedures, including endoscopies, laparoscopies, lithotripsies, orthopedic, and open surgeries.
- Gained insight into medical equipment, from ultrasound and anesthesia machines to the Da Vinci surgical system.

Projects

Differential to Single-ended Amplifier — Nov 2024 – Dec 2024
- Designed schematic and layout with Virtuoso; clean layout-versus-schematic (LVS) and design rule check (DRC).

Prosthetic Hand — Aug 2021 – Sep 2023
- Designed and built a 6-DoF myoelectric prosthetic hand for a friend with a congenital left-hand anomaly (acheiria).

Skills

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