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

Research Intern | Neuroscience   *June 2025 – Present*
NYU Langone Health • New York, NY
- Building a custom robotic bird to study vocal learning and social behavior in budgerigars, using ROS2 for robot control.
- Optimizing budgerigar vocalization analysis pipelines to extract acoustic features and cluster syllables.
- Developed a ROS2 system for automatic budgie tutoring and data collection, controlling a custom robotic bird optimized for tutoring.

Research Volunteer | Ergonomics in Otolaryngology, Computer Vision in Operating Room   *Feb 2024 – Present*
Mount Sinai • New York, NY
- Applying deep learning and computer vision to classify surgical instruments and phases in endoscopic sinus surgeries.
- Developed data-processing pipelines to interpret raw data from Xsens IMUs, analyzing the ergonomic stress on joints.

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.
- Built a Django service that automates article aggregation via private and public APIs, analytically integrating forecasts and market indicators to enhance LLM-driven sentiment analysis, ultimately delivering actionable insights to analysts.

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 direct human-robot 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 real-time 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.

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 robotic-arm assisted surgeries.

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