Rosh Ho

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github | linkedin

Education

Columbia University **Sep 2021 - Aug 2025**

Computer Science *New York, New York*

- Paper (under review): Bringing back dexterous manipulation to upper body impaired patients (such as Stroke, Arthritis, Cerebral Palsy, Traumatic Brain Injury) through non-invasive wearable orthotics that correlate objects to human grasps.
- Courseworks: Deep Learning with Computer Vision, Natural Language Processing, Computational Aspects of Robotics, Robotics Manufacturing, Embedded Systems, Databases, Operating Systems
- Activities: Chancellor's Student Advisor, Project Manager of Violence Reform Initiative, UN Millennium Fellow.

Experience

Davis Mechatronics **Aug 2025 - Current**

Robotics Software Engineer *Davis, California*

- Improved picking accuracy by 23% by developing a custom computer vision architecture with channel separation for RGB–D depth processing and expanding the training dataset
- Reduced labeling costs by $5,000 and accelerated turnaround time by developing a custom data-labeling wearable device

Robotic Manipulation and Mobility Lab at Columbia University **Feb 2024 - Aug 2025**

Robotics Research Assistant *Columbia University*

- Developed **robotics control modules** in **C++** and **Python** within **ROS/Linux** environment to translate human grasping patterns into **real-time autonomous manipulation routines**.
- Engineered wearable prosthetics integrating EMG sensors to enhance functionality and user comfort, demonstrating cross-disciplinary innovation.
- Built modular **data-collection systems** that reduced preprocessing time by **40%**, streamlining the mapping of human grasping patterns to robotic actuation.

Columbia Business School **Jul 2024 - May 2025**

Research Assistant *New York, New York*

- Conducted sentiment analysis on political campaigns to evaluate the impact of local versus national messaging strategies using advanced NLP techniques under the guidance of Professor Mohamed Hussein.
- Collaborated with a team to develop data-driven insights for improving voter engagement and outreach strategies.

LINE **May 2024 - Sep 2024**

Software Engineering Intern *Taipei, Taiwan (ROC)*

- Engineered **high-performance backend** for dynamic ad placement on streaming platforms using **Go, AWS,** and **MySQL, reducing request latency by 23%** in a **latency-sensitive production environment**.
- Designed and implemented **automated unit-testing pipeline** in **Go**, improving **API reliability** and **scalability** for a system serving **millions of daily requests**.

Blackstone **May 2023 - Aug 2023**

Software Engineering Intern *New York, New York*

- Built a **Python-based monitoring pipeline** for simulated data center systems, applying **AI-driven anomaly detection** to sensor data (temperature, power, throughput).
- Deployed results to a **Grafana dashboard** with **Prometheus** and automated weekly reporting using **Airflow**, improving operational insights and reducing manual analysis.

Bionic Engineering and Assistive Robotics Laboratory at UC Davis **Jan 2022 - May 2023**

Robotics Research Assistant *University of California, Davis*

- Researched cross-embodiment pre-training towards human-level dexterity from human object manipulation with a focus on supportability for robotic applications.
- Built a **grip strength sensor (manipulandum)** to measure grip strength and optimize prosthetic control, enhancing the influence of assistive technology.
- Designed **mechatronic prosthetics** with EMG sensor inputs and neural sensory outputs for adolescents and adults, bridging engineering innovation with medical applications.

Intel **May 2018 - Sep 2018**

IoT Engineering Intern *Taipei, Taiwan (ROC)*

- Deployed IoT-enabled streetlights, driving energy savings and cost reductions. Configured Intel hardware for Computex 2018 demos, showcasing advanced IoT solutions globally.