

ROLAND LIST

(702) 960-5693 | roland.list@columbia.edu | www.linkedin.com/in/roland-list | <https://rlist07.github.io>

EDUCATION

Columbia University | School of Engineering & Applied Sciences | Class of 2026

B.S. | Major in Computer Science | Minors in Mechanical Engineering and Philosophy

EXPERIENCE, PROJECTS, & EXTRACURRICULAR

BevBoost | Software Engineer

Summer 2025

- Independently programmed pneumatic industrial bottling machines in Structured Text (ST) language, which allowed filling, closing, and insertion of BevBoost's patented beverage flavor pods.
- Installed and programmed optical laser sensors on equipment, reducing jams and allowing for additional automation, which increased production speed from 60 to 120 units per minute (2x).

Columbia University | Teaching Assistant

Sept. 2024 - Present

- Data Structures & Algorithms, Introduction to Programming in Java.
- Support over 400 students in learning foundational programming concepts, including object-oriented principles and core data structures such as linked lists, trees, and graphs.
- Conduct weekly office hours to troubleshoot coding assignments and clarify concepts.

Columbia Space Initiative

Sept. 2023 - Present

- **AQUAS Mission: Navigation & Controls:** Responsible for designing and building an autonomous algal sampling boat for New York City public parks (featured in the New York Times). Built a centralized power distribution system for boat motors and controllers.
- **High Altitude Balloons:** Contribute to the design, construction, and launch of high-altitude weather balloons reaching altitudes of 100,000+ feet, gathering atmospheric data and footage in near-space conditions. Specialize in real-time tracking systems by integrating Arduino microcontrollers and GPS modules to transmit location data via APRS (Automatic Packet Reporting System).

Hacking for Defense

Sept. 2024 - Dec. 2024

- Collaborated with a multidisciplinary team for United States Central Command (CENTCOM) to address challenges in mapping unknown environments for military and humanitarian applications.
- Designed and developed a prototype mapping system capable of generating a point cloud and 3D mesh from a single photograph, utilizing computer vision and Hugging Face API.

Acres Manufacturing | Software Engineering Intern

Summer 2024

- Designed and implemented game processors in Golang to process real-time slot machine game feeds using RedPanda and Apache Kafka, ensuring seamless data ingestion and reduced latency.
- Enhanced casino player loyalty and play frequency by integrating a progressive jackpot system into the casino management software, addressing the need for better engagement and customer retention.
- Built and tested a RESTful API, enabling secure, scalable data storage from a MySQL DB.

Clark County Information Technology Dept. | Programming Intern

Aug. 2021 - May 2022

- Led the migration of a county-wide media server by developing Python web scrapers using Requests and BeautifulSoup4 to identify and update outdated video and audio links on over 2000 web pages.
- Audited Active Directory with PowerShell to ensure compliance and improve security.

SKILLS

Programming Languages: Python, Java, Go, C, JavaScript, SQL, Powershell, Bash, HTML, CSS

Frameworks & Tools: Git, Selenium, Redpanda, Apache Kafka, Postman, React, FastAPI, Vim

Relevant Courses: Natural Language Processing, Machine Learning, Artificial Intelligence, Deep Learning for Computer Graphics, Advanced Programming in C, Data Structures & Algorithms