ROLAND LIST

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EDUCATION

Columbia University, School of Engineering & Applied Sciences May 2026
B.S. in Computer Science

- **Relevant Coursework:** Operating Systems, Machine Learning, Artificial Intelligence, Natural Language Processing, Computer Vision, Data Structures & Algorithms, Advanced Programming in C, Embedded Systems

TECHNICAL SKILLS

- **Languages:** Go, Rust, Python, Java, C, SystemVerilog, TypeScript, JavaScript, SQL, Bash
- **Frameworks & Libraries:** React, Node.js, FastAPI, Tokio, Axum, SQLx, Tailwind CSS
- **Infrastructure & Tools:** RedPanda, MySQL, SQLite, REST APIs, OpenAPI, Git, Linux, Nix, FPGA, Arduino, PLCs (Structured Text)

EXPERIENCE

BevBoost | Software Engineer June 2025 – Present
Boulder, CO

- Programmed the fill/cap/insert control system in Structured Text (CODESYS), coordinating pneumatic actuators via sequential state machines driven by edge-triggered digital inputs from the bottling line.
- Doubled line throughput from 30 to 60 units/min by adding input debouncing and a retry policy to the jam-detection logic, eliminating false-positive jams that had forced conservative cycle timing
- Deployed a web-based HMI over the PLC's dedicated wireless network
- Owned the controls software end-to-end as the sole engineer: requirements, implementation, on-floor debugging, and operator handoff.

Acres Manufacturing | Software Engineering Intern June 2024 – Sept. 2024
Las Vegas, NV

- Built event-driven game processors in Go that consumed real-time slot machine event streams from RedPanda, triggering downstream business logic such as jackpot evaluation and player alerts.
- Implemented endpoints on a RESTful API backed by MySQL to persist game session data.
- Prototyped a progressive jackpot contribution module for the casino management platform, exploring data model and trigger logic to inform a future feature.

Columbia University | Teaching Assistant, Data Structures & Intro to Java Sept. 2024 – May 2026
New York, NY

- Support 400+ students on OOP, recursion, and core data structures (linked lists, trees, graphs, hash tables) through weekly office hours and grading.

PROJECTS

Ixion (withixion.com) | Lab Management Platform for University Research Labs Mar. 2025 – Present
Rust (Salvo, SeaORM), React, TypeScript, SQLite, Python (FastAPI), NixOS

- Co-built a production procurement platform used by 60+ university research labs, covering purchasing, receiving, reconciliation, and compliance-aware approval workflows.
- Added AI automation via Gemini that auto-approves or flags requests against grant and institutional policy, plus a Python/FastAPI microservice using Claude for analytics; deployed on NixOS with sops-managed secrets, S3 Glacier backups, and Slack alerts.

Real-Time Room EQ Correction | FPGA + ARM Embedded System Mar. 2026 – May 2026
SystemVerilog, C, Python

- Co-built a system that plays a sine sweep and runs a hardware FFT to measure the room frequency response, calculating EQ correction bins for downstream software to flatten room acoustics; implemented a custom FPGA peripheral that bridges the ARM HPS and FPGA fabric.

Columbia Space Initiative | High Altitude Balloons Sept. 2023 – Dec. 2025

- Integrated Arduino and GPS modules to transmit location over APRS during high-altitude balloon launches reaching 100,000+ ft.