Daniel E. Puleio

516.359.9764 | danielpuleio@gmail.com
Website: https://danielpuleio.github.io/aboutme/

EDUCATION

University at Buffalo, The State University of New York
Bachelor of Science, Computer Engineering, May 2018

PROFESSIONAL EXPERIENCE

Teralink Technologies Inc.
Senior Principal Software Engineer *– Jan 2026 - Present*

- Designed and built TeraDrone, a real-time drone-to-drone communication system for DJI M600 drones using LoRa radio (915 MHz), RTK GPS positioning, and gimbal pointing with mounted DJI Ronin MX
- Implemented a CCSDS 133.0-B-2 compliant wire protocol with big-endian serialization over half-duplex LoRa packet-mode transport, supporting multiple message types and command subsystems
- Built a multithreaded command execution engine with priority-based dispatch, FIFO executor queues, atomic preemption, and a vehicle control arbiter for concurrent flight and gimbal operations
- Developed drone-to-drone mutual tracking with a waterfall pointing pipeline, demand-driven position exchange and link-loss recovery
- Integrated DJI Onboard SDK 3.9 for flight control, gimbal control, RTK GPS, and telemetry with transparent RTK/GPS fallback and GPS-disciplined clock synchronization
- Developed an interactive ground station CLI with GNU readline, async response handling, and background LoRa packet processing
- Deployed on Raspberry Pi 5 with systemd, communicating with DJI A3 flight controllers over UART

Flowt, CASHEWW CONSULTING, LLC
Software Engineer II *– Nov 2024- Oct 2025*

- Joined as an early Software Engineer II to help build FLOWT's B2B SaaS vendor payout platform on Next.js App Router, TypeScript, PostgreSQL, and Drizzle ORM
- OAuth2 authentication using Kinde with inactive session timeout enforcement, and led infrastructure migration from AWS to Vercel
- Integrated Stripe and Alloy for end-to-end payment processing and merchant workflow automation, backed by Inngest event-driven workflows and Zod type-safe API boundaries

Goldman Sachs Group, Inc.
Technology Analyst *– July 2018 - December 2021*
Technology Associate *– Jan 2022 - Nov 2024*

- As part of Marquee's platform infrastructure team, developed and maintained core Dropwizard services in Java 8 and Java 11, including authentication, authorization, user and group management, client engagement, activity tracking, and desktop workspace management
- Developed and owned Router, Marquee's in-house API gateway, enforcing authn/authz, request validation, CSRF and content-policy checks, and Zookeeper-backed service registration across 200+ microservices
- Deployed Envoy Proxy as an ingress layer in front of Router, implementing L7 routing rules for traffic isolation across Marquee's execution services, improving throughput and reducing latency for institutional clients

NASA Goddard Space Flight Center
Software Engineering Intern *– Summer 2017*

- Built a C++ Qt application for NASA's Radar Control Center which was engineered to listen and receive encoded radar packets on the network using asynchronous UDP sockets
- Imported methods of decoding raw radar packets and checking for the quality of each packet. Supplied a graphical user interface to identify which radar was sending grade tracking data
- Server GUI also gave operators the ability to broadcast desired radar packets on the control center's network via UDP datagrams
- Added layer of AES 256 encryption to broadcast UDP packets for security requirements
- Built client GUI application to receive and decrypt the broadcasted radar packets filtered by operator, given the user entered the correct password and is connected to the Radar Control Center's subnet

SKILLS

- **Languages:** C++ (Embedded, C++17/20), C, Python, Java (8/11), TypeScript, JavaScript, SQL, Bash
- **Embedded Systems & Firmware:** ESP32, FreeRTOS, Arduino/PlatformIO, UART/I2C/SPI, sensor integration (MPU-6050 IMU, BME280 barometer, QMC5883L magnetometer), servo/PWM control, LoRa radio (915 MHz), PID control loops, Kalman filter state estimation, flight mode state machines, FDIR (Fault Detection, Isolation, and Recovery), GPS-disciplined clock synchronization

- **Spacecraft & Aerospace Software**: CCSDS 133.0-B-2 wire protocols, NASA F´framework, CubeSat payload software, DSP/FPGA development (ZCU102, ADRV9009), telemetry systems, ground station software, RTK GPS positioning, radar packet processing, asynchronous UDP networking
- **Drone & Robotics:** DJI Onboard SDK 3.9, DJI M600 Pro, DJI A3 flight controller, Ronin-MX gimbal control, gimbal pointing math (geodetic-to-ENU transforms, azimuth/elevation), D-RTK 1, field operations at controlled airspace (KBOS), FAA Part 107 compliance, METAR/TAF interpretation
- **Systems & Concurrency:** Multithreading, priority-based dispatch, FIFO executor queues, atomic preemption, mutexes, RAII, smart pointers (unique_ptr, shared_ptr), move semantics, event-driven architectures
- Backend & Web: Next.js App Router, Dropwizard, REST APIs, OAuth2, Zod, Drizzle ORM, PostgreSQL, Envoy Proxy, NGINX, Zookeeper, microservices architecture, API gateway design
- **Cloud & Infrastructure:** AWS, Vercel, Raspberry Pi fleet management, systemd, cloud-init, NetworkManager, Linux (Ubuntu, WSL2), Docker
- **Integrations & Payments**: Stripe, Alloy, Kinde (OAuth2), Inngest (event-driven workflows)
- **Cryptography & Security:** AES-256 encryption, authn/authz, CSRF protection, content-policy enforcement, session management
- **Tools:** Git/GitHub/Gitlab, GNU readline, Qt, ReportLab, Tailwind CSS