MATTHEW MERIOLES

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EDUCATION

University of California, San Diego
M.S. Electrical Engineering: Communication Theory & Systems **Sept 2025 - Present**
Coursework: **Modern Communication Networks, Information Theory**

University of California, San Diego
B.S. Electrical Engineering: Machine Learning & Controls **Sept 2020 - Jun 2024**
Coursework: **Data Networks I/II, Deep Learning, Intelligent Systems, Software Foundations A/B**

EXPERIENCE

Northrop Grumman · Electrical Engineer II **Nov 2025 - Present**
- Write automation scripts in python and ansible for distributed config generation, deployment, and sustainment.
- Troubleshoot network issues on EVPN/VXLAN infrastructure, Palo Alto Firewalls, and NSX.
- Identify manual workflows and prototype automated alternatives to reduce deployment time and baseline drift.

Northrop Grumman · Associate Electrical Engineer **Sept 2024 - Nov 2025**
- Designed, tested, and integrated full-stack solutions for core network infrastructure in datacenter builds.
- Implemented network monitoring and observability solutions using the TIG stack along with tools such as SuzieQ, LibreNMS, and custom python scripts for system polling.
- Created system build guides using restructured text and sphinx/jinja2 document generation.

Northrop Grumman · Electronics & Payloads Intern **Jun 2023 - Aug 2023**
- Developed a scalable python application to remotely connect with network devices and perform configuration analysis, reducing hourly validation processes to a couple minutes.
- Collaborated with network engineers to design, test, and integrate network infrastructure.

Northrop Grumman · Electronics & Payloads Intern **Jun 2022 - Aug 2022**
- Used Cisco Modeling Labs to configure, deploy, and test virtual network topologies for mission planning and training purposes.
- Made small python and VBA scripts to help automate redundant tasks for the team.
- Facilitated weekly build process meetings, providing shared notes resources, coordinated cross-team validation processes.

Boeing · Electrical Engineering Intern **Jun 2019 - Aug 2019**
- Utilized LabVIEW and various software to test electronic components in areas of performance, reliability, and quality in varying temperature environments.
- Recorded and submitted information regarding electrical components for product development.

UC San Diego JSA · Web Developer & Staff **Mar 2023 - Jun 2024**
- Designed and deployed exible web features (e.g., user logins, dynamic galleries) using Firebase, HTML/CSS/JS, improving website usability for hundreds of students and club members.
- Participated in club cultural event planning, volunteered at a local Japanese preschool, as well as led language table activities hosting 60+ participants weekly.

PROJECTS

802.11 OFDM PHY Implementation
- Implemented a python-based IEEE 802.11 OFDM baseband chain (packet construction, STF/LTF preambles, IFFT/FFT, cyclic prefix, QPSK mapping) and simulated channel impairments including attenuation, phase rotation, carrier-frequency offset, and AWGN.
- Designed self-/cross-correlation algorithms for packet detection and timing synchronization, then used LTF-based per-subcarrier channel estimation and equalization to recover 4k+ transmitted bits with zero BER.

BitTorrent Simulation
- Developed a python-based BitTorrent simulator modeling tit-for-tat piece exchange, optimistic unchoking, and peer churn across hundreds of nodes.
- Visualized dynamic P2P topologies with NetworkX/Matplotlib to study scalability, resilience, and fairness under heterogeneous upload rates.

SKILLS

Languages: C/C++ · Python · Ansible · MATLAB · LabVIEW · Verilog · SQL · Jinja2 · ReST
Technologies: Grafana · InfluxDB · Telegraf · CML · Wireshark · SuzieQ · LibreNMS · Docker · git · Jira · LaTeX
Certifications: Security+ · Active TS/SCI Security Clearance
Spoken: English (Native) · Japanese (Professional Working Fluency) · Spanish (Basic)