

CARSEN SCHULZ

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CORE COMPETENCIES

Programming Languages: C++, Python, Java, SQL, MATLAB

Tools & Frameworks: Linux, Git, Boost, Docker, Kubernetes, RTOS, CMake, Visual Studio, Azure DevOps

Systems & Concepts: Profiling/Performance Optimization, Event-Driven Design, Data Analysis, Embedded Systems, CI/CD

PROFESSIONAL EXPERIENCE

Embedded Software Engineer II, Raytheon (Tucson, AZ)

Jul 2022 – Present

- Delivered Windows XP Embedded missile test equipment prototype 3 months ahead of schedule; led a 3-member team to implement 6 additional capabilities, presented prototype to 50+ customer stakeholders.
- Created custom C++ TFTP client/server application; analyzed function execution using Visual Studio Performance Profiler to optimize and improve speed by 15% over Windows TFTP.
- Refactored missile reprogramming algorithm in C++/Python; reduced execution time by 73% via profiling-driven changes and automated unit tests; led deployment effort with an 8-member development team.
- Led software qualification testing to verify compliance with 100+ safety and performance requirements by utilizing data pipelines and automation; presented results to senior leadership to secure flight testing approval.
- Coordinated 30-member cross-functional team during flight test to evaluate 100GB+ of real-time and post-flight data; communicated findings to leadership to ensure flight test success.

Software Engineering Intern, Lockheed Martin Space (King of Prussia, PA)

Apr 2021 – Nov 2021

- Automated containerized simulation pipelines (Docker, Kubernetes, Jenkins), reducing build/deployment time and improving CI/CD efficiency; collaborated with team members to standardize pipelines across projects.
- Led 6-member recruitment analytics project; analyzed survey feedback, developed data-driven recommendations, and presented findings to executive board, improving recruitment process efficiency.

Data Quality Engineering Intern, Raytheon Missiles and Defense (Andover, MA)

Jun 2020 – Apr 2021

- Automated Quality Engineering workflows and pipelines, reducing macro execution time from 6 hours to 4 minutes.
- Restructured manufacturing documentation, lowering human-error defect rates by 28%.

PROJECTS

C++ Low-Latency Market Data Pipeline

- Built a high-performance event processing pipeline, including immutable event structures, FIFO queue, and single-threaded processor, demonstrating low-latency, high-throughput system design.
- Measured and reported event throughput, queue utilization, and latency metrics.

Python API Backend

- Developed a RESTful API using FastAPI with CRUD endpoints supporting POST, GET, PUT, and DELETE operations, implemented input validation and in-memory data handling to showcase backend architecture and API design skills.

EDUCATION

BS in Computer Science (Summa Cum Laude), Minor in Engineering Entrepreneurship

Sep 2018 – May 2022

Villanova University

Villanova, PA