DOMINICK ALEXANDER VASKE

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PROFESSIONAL SUMMARY

U.S. Navy Submarine Officer Veteran with an active TS/SCI clearance and 7+ years leading complex technical systems in high-stakes environments. Trained in nuclear engineering and reactor operations aboard fast-attack submarines, with deep experience in embedded systems, fault isolation, and safety-critical decision-making. Currently transitioning into software engineering through Columbia University's Computer Science Bridge Program. Proven ability to lead technical teams of 150+ personnel and deliver results under pressure. Actively pursuing research and software development roles that combine systems reliability, data-driven insight, and applied machine learning to build, scalable, impactful technology.

EDUCATION

Columbia University in the City of New York — New York City, NY
Master of Science in Computer Science, Machine Learning Concentration, GPA: 4.03/4.0 — May 2024 – Dec 2026 (Anticipated)

- Relevant Coursework: Operating Systems (Linux), Advanced Programming in C, Data Structures & Algorithms (Java), Artificial Intelligence, Algorithms, Databases, Advanced Logic Design (Audit)

University of Pennsylvania — Philadelphia, PA
Bachelor of Science in Systems Engineering with Mathematics Minor, GPA: 3.51/4.0, Cum Laude — Aug 2014 - May 2018

- Relevant Coursework: Computer Systems, Embedded Systems / Microcontrollers Lab, Signal Processing, Control Systems (feedback, stability, and dynamics)
- Capstone: Designed a collapsible solar-panel system to mount on an unmanned aerial drone, enabling self-charging capability in remote environments through lightweight power-management circuitry and modular frame design

TECHNICAL SKILLS

Programming: C, C++, Java, Python, Bash/PowerShell, JavaScript, HTML/CSS, x86 Assembly
Systems & Tools: Linux/Unix, Git/GitHub, TCP/IP, SQL, NoSQL
Data/ML: PCA, K Nearest Neighbors, Matplotlib, NumPy, Pandas
Hardware/Embedded: Real-time systems, fault isolation/debugging, RTL/Verilog (basic), system architecture

PROFESSIONAL EXPERIENCE

United States Merchant Marine Academy (USMMA) — Kings Point, NY
Instructor of Naval Science and Security Manager — Jul 2023 – Present (Full-Time Role)

- Modernized technical curriculum for 1000+ freshmen midshipmen, integrating scenario-based Naval Science exercises to strengthen problem-solving, leadership principles, and public speaking experience
- Managed Academy's security clearance operations in compliance with Defense Counterintelligence and Security Agency, achieving 100% clearance compliance rate
- Led curriculum redesign and authored assessment methodologies, achieving a 92% pass rate across academic and leadership benchmarks; directly supported academy reaccreditation by Middle States Commission

United States Navy, Submarine Officer — Norfolk, VA
Engineering Officer — May 2020 - Jun 2023

- Led monitoring of 1000+ embedded sensors for nuclear propulsion systems, enabling early anomaly detection and safe operation of high-voltage equipment aboard $2 billion submarine
- Directed 200+ cross-disciplinary maintenance items across electrical, mechanical, and software systems to sustain mission-critical readiness and US/NATO deployment timelines
- Delivered executive-level briefings and recommendations to commanding officers and senior stakeholders on weapons and nuclear-engineering system procedures and repair processes
- Balanced performance and reliability trade-offs under strict timing and safety constraints, ensuring operational continuity during high-stakes missions

SOFTWARE PROJECTS

Genre Classification Engine | Python, PCA, k-NN

- Engineered a supervised ML pipeline to classify a labeled test set with input data of 500 songs across 5 genres with 90% accuracy
- Retrieved and analyzed song metadata (tempo, loudness, key, acousticness, energy) from Spotify's API to extract audio features
- Applied Principal Component Analysis (PCA) for dimensionality reduction
- Designed for integration into a music recommendation prototype

Custom Linux CPU Scheduler | C, Linux Kernel, Scheduling Algorithms

- Implemented a custom CPU scheduler optimized for latency-sensitive workloads, benchmarking against Linux's CFS scheduler
- Achieved an average 200 ms improvement in task completion times across varied load conditions through dynamic priority weighting and fairness balancing
- Developed kernel-level hooks for process selection and context switching, ensuring compatibility with multiprocessor architectures
- Designed for integration into embedded systems performance research and real-time workload optimization

Kernel-Level Process Tree Scanner | C, x86 Assembly, Linux

- Developed a custom Linux kernel module to traverse process trees and extract thread-level metadata for x86-64/ARM64 architectures
- Applied RCU locking and secure user-kernel data transfer protocols to ensure concurrency safety
- Designed for integration into performance monitoring tools used in embedded systems diagnostics

PROJECTS MANAGED – U.S. NAVAL SUBMARINE OFFICER

Security Clearance Workflow Overhaul | USMMA 2023 - 2025

- Identified systemic delays in clearance processing, blocking students from competitive internships (submarines, aviation, intelligence)
- Overhauled workflow by initiating sophomore-year processing, building a freshman pipeline, and creating tracking dashboards
- Coordinated with DCSA and FBI to expedite cases, increasing clearance compliance from 60% to 100% across 2,000+ students
- Contributed to a 20% increase in active-duty assignments (25% to 45%) by enabling access to career-shaping internships

Weapons Systems Software Upgrade and Integration | US Navy – USS New Mexico 2022

- Oversaw installation and validation of AN/BYG-1 Advanced Processor Build – submarine combat control and fire-control weapons systems – software upgrade, modernizing the submarine's combat control and fire-control system for deployment readiness
- Coordinated between ship's weapons division, NAVSEA engineers, and offboard contractors to ensure seamless integration with AN/BQQ-10 Sonar, BLQ-10 Electronic Warfare, and BPS-16 Radar subsystems
- Verified system functionality and resolved interface issues, contributing to a 25% reduction in fire-control processing latency and 30% faster target recognition during operational testing
- Trained 50+ operators and watchstanders in upgraded system workflows, achieving 100% certification prior to overseas deployment and ensuring continuous mission readiness

Tactical Systems & Contact Management | US Navy – USS New Mexico 2021 - 2023

- Directed real-time fusion of sonar, navigation, and radar sensor data as Officer of the Deck in mission-critical operations through contested waters, ensuring safe maneuvering and tactical readiness.
- Served as Contact Manager tracking adversary submarines using advanced acoustic processing systems, synthesizing multi-sensor data to support fire-control and command decisions
- Trusted to serve as Officer of the Deck in top secret classified operating areas — a role normally reserved for second-tour department heads — demonstrating superior systems comprehension and operational judgment
- Conducted 20+ complex transits through high-density maritime zones including the Mediterranean Sea and Greenland, Iceland, UK (GIUK) Gap without incident, contributing to 100% operational mission success