# Nicholas A Davies

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## EDUCATION

**California State University, Stanislaus** **GPA: 4.0**

Bachelor of Science (B.S.) in Computer Science, Minor in Spanish *Expected Graduation: May 2027*

Honors/Awards: Honors Program, Dean's List, Warrior Excellence Scholarship, and NSF S-STEM Scholarship

## SKILLS

**Languages:** C/C++, Python, Java, Bash

**Technologies & Tools:** Linux, Git, Docker, Kubernetes, CI/CD, Google Cloud, GTest, GMock, VSCode, Eclipse

**Other:** Agile, Scrum, Jira, Confluence

## EXPERIENCE

**Keysight Technologies Software Engineer Intern** *May 2026 - Present*

Keysight Technologies, Calabasas, CA

- Upgrading and refactoring legacy network switch ASIC software using C/C++, porting low-level feature implementations to a next-generation ASIC architecture and designing ASIC-independent APIs leveraging gRPC and Protocol Buffers.
- Developing, deploying, and debugging containerized C++ and Python services in a Kubernetes environment, contributing to CI/CD workflows using Git to support scalable data center networking infrastructure.

**Lockheed Martin Software Engineer Intern** *June 2025 - August 2025*

Lockheed Martin MFC, Orlando, FL

- Improved reliability and accelerated delivery of mission-critical missile software by developing unit tests for C++ real-time embedded systems using GTest, CMake, GitLab, and CI/CD workflows.
- Diagnosed and resolved a persistent timekeeping defect in embedded C++ software, restoring accurate and reliable telemetry reporting for a critical internal system.
- Led the standardization of unit testing practices by authoring and delivering comprehensive documentation adopted across the JASSM software engineering team.
- Collaborated with multiple cross-functional Agile teams to deliver high-quality software through Jira-based task tracking, daily stand-ups, code reviews, continuous integration/continuous deployment workflows, and sprint planning.

**Medical Big Data Analysis STEM-CRU Research Intern** *September 2024 - May 2025*

California State University, Stanislaus

- Implemented a medical big data analysis application to identify disease–genome correlations using a 10 TB dataset under a 500 GB memory constraint, employing Apache Spark, GlusterFS, MongoDB, SparkR, and Shiny.
- Designed a secure user authentication and management system using Python, Linux, MongoDB, and Shiny.
- Performed statistical analysis and visualization using R, Python, Pandas, NumPy, Plotly, and cloud-based environments (Google Cloud, Azure ML).
- Presented research findings at the STEM CRU Reverse Career Fair and College of Science Poster Celebration.

**Information Technology Support Specialist** *August 2024 - Present*

Canal Veterinary Hospital, Turlock, CA

- Upgraded network infrastructure by deploying Ubiquiti routers and access points, expanding Wi-Fi coverage by 60%, optimizing firewall rules, and deploying an encrypted VPN to significantly strengthen data security.
- Maximized hospital workflow efficiency by migrating IT technologies from multiple legacy ecosystems into a unified AI-powered veterinary management platform, configuring and supporting 44+ hospital devices.

## TECHNICAL PROJECTS & PROFESSIONAL DEVELOPMENT

**ESP32 Dog Meal Tracker** *November 2025*

- Built an embedded dog meal tracking system in C/C++ on an ESP32 microcontroller with a touchscreen interface.
- Engineered the TFT touchscreen GUI with custom bitmap pixel arrays and ESP32 GPIO input handling.
- Flashed and debugged firmware using the Arduino IDE, and utilized Git to manage development iterations.
- Implemented the embedded system with Apple HomeKit integration for real-time remote device control via iOS devices.

**Spotify Music Listening Analyzer** *February 2026 - Present*

- Designed a full-stack Spotify analytics platform using an HTML, CSS, and JavaScript frontend and a Python (Flask) backend API to process and analyze raw JSON streaming data into interactive user-facing insights and dashboards.
- Built a natural language query system powered by the Qwen2.5 LLM to translate user questions into structured analysis workflows, enabling conversational exploration of listening data.

**Self-Hosted Infrastructure Platform** *July 2020 - Present*

- Constructed a personal homelab architecture powered by Proxmox VE to manage Linux, Windows, and TrueNAS virtual machines, establishing self-hosted services in Docker containers via Docker Compose (YAML manifests).
- Advanced home network security and accessibility by defining VLANs and firewall rules, and utilizing Raspberry Pis as local DNS servers (Pi-hole), along with Tailscale VPN, Cloudflare tunneling, and NGINX reverse proxy.
- Automated system maintenance and monitoring with Bash scripts and cron jobs, reducing manual overhead by 95%.

**LLM Translation Evaluation (Arabic to English)** *February 2025 - Present*

- Evaluating LLM performance on Arabic-to-English translation of historical texts using BLEU, TER, and chrF with qualitative analysis to identify limitations in translating morphologically complex languages.