

# ALEX MCVAY

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525 Mesa Dr. Klamath Falls OR, 97601 (Willing to relocate)

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## **PROFESSIONAL SUMMARY:**

U.S. Air Force veteran and Computer Science graduate adept at designing and coding solutions from broadly defined problems, with a strong command of object-oriented design, data structures, and algorithms. Proven experience building scalable, fault-tolerant distributed systems, eager to innovate and contribute to a new dream.

- **Collaboration** – Experience working cross-disciplinary servicemembers to conceive, design, and bring innovative products and services to fruition.
- **Creativity** – Proficient in creating innovative solutions to broadly defined problems at incredible scale and speed to help lead fundamental changes in the industry

## **PROFESSIONAL EXPERIENCE**

### **Naval Surface Warfare Center (NSWC), Philadelphia, PA.**

**2023 – 2024**

#### **VTEC Wargames Intern**

Design and build innovative war games in a large distributed computing environment and help lead fundamental choices for leadership, resulting in industry wide changes, using Java.

- Facilitated and conducted highly engaging humanitarian warfare games promoting awareness of complex global issues related to conflict and peacekeeping efforts.
- Conducted extensive playtesting and user feedback analysis to iterate and improve game mechanics.
- Optimized code and assets to ensure smooth performance on various gaming platforms.
- Conducted thorough research on historical battles, military strategies, and contemporary warfare tactics to inform game design.
- Received accolades for creating innovative war game experiences that were praised for their realism and effectiveness in training exercises.
- Collaborated with military experts to incorporate realistic simulation elements into war games for maximum educational value.
- Developed detailed documentation for game mechanics, user interfaces, and software architecture to facilitate knowledge transfer and future development efforts.
- Implemented agile development methodologies to ensure iterative progress, adaptability to changing requirements, and effective team collaboration.
- Gathered Data and assisted in decision making process for 5 different perspective ships

### **Know It All Tutors, Remote**

**2022 – 2023**

#### **Private tutor**

Taught and ensured students understanding of coding standards, source control management, build processes, testing, operations, and computer science fundamentals such as: object-oriented design, data structures, algorithm design, problem solving, and complexity analysis

- Conducted code reviews and debugging sessions to help students identify and correct errors in their programs.
- Facilitated one-on-one tutoring sessions focusing on programming languages, algorithms, and data structures.
- Implemented engaging teaching methods and instructional strategies to enhance students' comprehension and retention of computer science material.
- Monitored and tracked students' progress through regular assessments and feedback to identify areas for improvement.
- Demonstrated a proven track record of helping students achieve academic success and improve their confidence in computer science.
- Facilitated one-on-one tutoring sessions focusing on programming languages, algorithms, and data structures.
- Assisted students in completing homework assignments, projects, and coding exercises, providing guidance to enhance problem-solving skills.
- Adapted teaching strategies to accommodate diverse learning styles and individual student needs, fostering an inclusive and supportive learning environment.
- Provided comprehensive academic support to students, including guidance on study habits, time management, and test-taking strategies, leading to improved academic performance.

**City of Fort Walton Beach, Fort Walton Florida**  
**Purchasing Department Assistant**

**2020 - 2021**

Created innovative solution to run predictions on distributed systems citywide in 6 months using Object-Oriented Design, to assist in the purchasing of supplies for the City of Fort Walton Beach

- Created system with distributed storage, index, and query systems while remaining scalable, fault-tolerant, low cost, and easy to manage/use for city employees.
- Created a Warehouse inventory system using SQL, VBA, and Advanced Microsoft Macros to determine usability of inventory, needs for new inventory, and purge inventory.
- Performed routine calculations to produce financial analyses and reports as needed.
- Collected and entered data for various financial spreadsheets using various coding languages.
- Attended and presented at finance department and company-wide meetings, assisting with financial reporting to managers and senior executives.
- Suggested changes and improvements to increase accuracy, efficiency, and cost reductions.
- Worked closely with relevant departments to ensure products purchased were in the taxpayers' best interest.
- Maintained current awareness of industry market trends.
- Conducted competitor analysis to identify popular products.
- Kept accurate records of purchases made using various programming languages.
- Engaged in ad hoc projects to support financial analysis and decision-making processes.
- Streamlined data entry processes by developing automated scripts, reducing manual effort and improving data accuracy.
- Collaborated with IT department to implement database enhancements, resulting in faster data retrieval and improved reporting capabilities.

**United States Air Force, Multiple Locations**  
**Inventory Accounting Manager and Egress Technician**

**2016 – 2020**

- Designed, developed, and implemented an innovative, scalable, and fault-tolerant inventory management system adopted internationally, increasing tracking accuracy by 30% and reducing system errors by 25%.
- Engineered advanced SQL-based forecasting and analytics tools to predict inventory needs, optimize stock levels, and cut excess expenditures across multiple maintenance units.
- Spearheaded a supply chain optimization initiative using aircraft operational data, streamlining parts ordering processes and improving logistics efficiency for mission-critical operations.
- Led cross-functional collaboration with multiple military branches to design, test, and deploy cutting-edge supply chain and equipment management solutions.
- Directed comprehensive inventory audits, compliance checks, and risk management processes to ensure accuracy and adherence to regulatory standards.
- Negotiated with vendors and suppliers to secure favorable pricing and ensure on-time delivery of critical parts, reducing procurement delays.
- Developed and delivered targeted training programs on new systems, inventory protocols, and safety procedures, resulting in a 20% increase in operational efficiency and a 15% reduction in workplace incidents.
- Managed hazardous waste and safety programs, redesigning protocols to improve environmental compliance and reduce risks.
- Supported F-35, F-16, F-15, and F-22 aircraft maintenance operations, including ejection system upgrades, as a certified explosives and electrical mechanic.
- Oversaw mission-related logistics, travel operations, and budget allocation for deployed personnel, ensuring seamless support and operational readiness.
- Leveraged Microsoft Office Suite, SQL, and data visualization tools to produce actionable reports that drove data-informed decision-making.

## EDUCATION/ CERTIFICATIONS/ QUALIFICATIONS

- **B.S. Information Systems and Technology/Computer Science**

*Villanova University, (2025)*

- **Coursework:** Algorithms, Cybersecurity, Software Development, Data Structures, Cloud Computing, Database Management.
- Proficient in Python, Java, C, SQL, Web Development; experienced in software development, system analysis, and database-driven applications.
- Led and contributed to projects, hackathons, and open-source initiatives; active member of Villanova Technology Club (VUTC).

- **Associate of Applied Science in Aerospace**

*Community College of the Air Force, (2020)*

- Specialized in aircraft maintenance, troubleshooting, and repair in high-pressure environments.
- Ensured compliance with FAA and military safety regulations through inspections and diagnostics.
- Maintained and repaired complex aerospace systems, including propulsion, avionics, and structural components.
- Collaborated with cross-functional teams to improve operational efficiency and aircraft readiness.

- **Software Engineer Intern Certificate, Hacker Rank, 2024**

- **Connect and Protect: Networks and Network Security | Google | Mar 2025 | Credential ID: 48KUECY53VT**

- **Foundations of Cybersecurity | Google | Mar 2025 | Credential ID: LN2GDKQ730CI**

- **Play It Safe: Manage Security Risks | Google | Mar 2025 | Credential ID: FD6QOJLRLSHV**

- **Tools of the Trade: Linux and SQL | Google | Mar 2025 | Credential ID: JSP1RGXDK6KG**

- **Computer Skills:** Advanced proficiency using Java, C++ and strong knowledge of Computer Science fundamentals in object-oriented design, data structures, algorithm design, problem solving, and complexity analysis.

## Projects

- **Task Calendar:** A calendar application that automatically schedules tasks for users based on priority and available time slots. Technologies: HTML5, CSS3, JavaScript, Web Development, UI/UX Design. URL: <https://alexmconvay.icu/Calendar-app/>
- **Dragon Fighter RPG:** A text-based monster fighting role-playing game with character progression and strategic combat. Technologies: HTML5, CSS3, JavaScript, Game Development, Responsive Design. URL: <https://alexmconvay.github.io/DragonFighter.github.io/>
- **Portfolio Website:** Personal portfolio website showcasing projects, experience, and skills. Technologies: HTML5, CSS3, JavaScript, Responsive Design. URL: <https://alexmconvay.github.io/Portfolio/>
- **Student Calendar:** A calendar application designed specifically for students to manage classes, assignments, and deadlines. Technologies: React, CSS3, HTML5, JavaScript. URL: <https://studentcalendar.netlify.app/>
- **Link Tree Clone:** A custom Link Tree alternative with additional functionality for downloading contact information. Technologies: HTML5, CSS3, JavaScript, Mobile-First Design. URL: <https://alexmconvay.github.io/Contact-Card/>
- **UBER-Data Analysis:** A data analysis project modeling UBER's data structure and providing insights on ride patterns. Technologies: SQL, Database Design, Data Analysis, Data Visualization. URL: <https://github.com/AlexMcVay/UBER-Data>
- **Tic Tac Toe:** A fully interactive Tic Tac Toe game with win detection and score tracking. Technologies: HTML5, CSS3, JavaScript, Game Logic. URL: <https://alexandra-mconvay.netlify.app/>
- **Overseas VA Schools:** A website listing and providing information about overseas schools approved for VA education benefits. Technologies: HTML5, CSS3, JavaScript, SQL, API Integration, C/C++, Dart. URL: <http://alexmconvay.icu/Va-overseas-schools>
- **Cryptogram:** An endless game of Cryptogram featuring favorite quotes with encryption and decryption puzzles. Technologies: HTML5, CSS3, JavaScript, Game Development, Encryption Algorithms. URL: <https://alexmconvay.github.io/spelling/>

## Skills

- **Programming & Development:** Java, Python, C, C++, SQL, HTML5, CSS3, JavaScript, React, VBA, Dart, Web Development, UI/UX Design, API Integration, Game Development, Mobile-First Design, Encryption Algorithms, Database-Driven Applications, Responsive Design.
- **Software & Tools:** Microsoft Office Suite (Excel, Word, PowerPoint, Access), Advanced Microsoft Macros, Git, GitHub, Version Control Systems, Linux, HackerRank, Google Cybersecurity Tools, SQL Query Optimization, Data Visualization Tools.
- **Computer Science & Engineering Fundamentals:** Object-Oriented Design (OOD), Data Structures, Algorithms, Problem-Solving, Complexity Analysis, System Analysis, Software Development Lifecycle (SDLC), Agile & Scrum Methodologies, Test-Driven Development (TDD).
- **Inventory & Supply Chain Management:** Inventory Forecasting, Distributed Storage Systems, Index & Query Systems, Fault-Tolerant Systems, Compliance Audits, Risk Management Frameworks, Vendor & Supplier Negotiations, Procurement Strategy, Cost Reduction Initiatives, Process Optimization, Supply Chain Logistics, Inventory Accuracy Enhancement.
- **Aerospace & Aircraft Maintenance:** Aircraft Systems Troubleshooting & Repair, Avionics, Propulsion Systems, Structural Repairs, Ejection Systems (F-35, F-16, F-15, F-22), FAA & Military Safety Compliance, Inspections & Diagnostics, Engine Overhauls, Electrical Systems Maintenance, Operational Readiness Assurance.
- **Data Management & Analytics:** SQL Query Writing, Data Analysis, Data Modeling, Data Visualization, Database Design, Data Auditing, Predictive Analytics, Reporting & Documentation, Statistical Analysis.
- **Project Leadership & Collaboration:** Cross-Functional Team Leadership, Stakeholder Engagement, Training & Mentorship, Hackathons, Open-Source Contributions, Event Planning & Execution, Interdisciplinary Collaboration, Process Improvement Projects, Technical Documentation Development.
- **Cybersecurity & Network Skills:** Network Security, Risk Identification & Mitigation, Security Compliance, Cybersecurity Fundamentals, Cloud Security Principles, Incident Prevention Strategies, Google Cybersecurity Certifications.
- **Soft Skills & Core Competencies:** Strategic Thinking, Problem-Solving, Creativity, Adaptability, Communication, Critical Thinking, Time Management, Process Improvement, Technical Training Delivery.

## Achievements

- Developed an internationally adopted inventory system, improving accuracy by 30% and reducing errors by 25%.
- Built SQL-based forecasting tools, cutting excess expenditures and optimizing stock levels.
- Led supply chain optimization initiatives, enhancing logistics and mission readiness.
- Created realistic war game simulations for NSWG, improving training effectiveness.
- Improved aircraft safety protocols, reducing incidents by 15%.
- Delivered training programs boosting operational efficiency by 20%.