ALEJANDRO ALMEIDA

Machine Learning & Cybersecurity Specialist | Cloud & Embedded Systems Developer

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PROFESSIONAL PROFILE

Software Engineer with experience in developing secure, high-performance applications across embedded, cloud, and AI environments. Designs and implements commercial software in C, C++, Python, and Go, integrating machine learning models and scalable cloud architectures. Builds and deploys deep learning systems for automation, forecasting, and intelligent decision support. Develops containerized applications and CI/CD workflows that improve reliability and accelerate delivery. Strengthens system security through code reviews, vulnerability assessment, and best-practice development standards. Combines hands-on software engineering with research experience in UAV cybersecurity and AI-driven analytics to deliver dependable solutions.

CORE COMPETENCIES & TECHINCAL TOOLS

- → **Software Development & Engineering**: C | C++ | Python | Go | Java | JavaScript | .NET | SQL | RESTful APIs | Object-Oriented Design | Software Architecture | Embedded Systems | Firmware Development | Secure Coding | Debugging | Test-Driven Development | Version Control (Git)
- → **AI, Machine Learning & Data Science**: Machine Learning | Deep Learning | LSTM Neural Networks | GPT-4 & LangChain | Model Deployment | Predictive Analytics | Algorithm Design | Data Processing | Model Optimization | TensorFlow | PyTorch | Scikit-learn | NLP | Computer Vision
- → **Cloud & DevOps**: AWS | Microsoft Azure | Google Cloud Platform | Docker | Kubernetes | CI/CD Pipelines | Containerization | Virtualization | Cloud Security | Monitoring & Performance Tuning | Infrastructure Automation
- → **Cybersecurity & Systems**: Application Security | Vulnerability Assessment | Intrusion Detection | Side-Channel Attack Mitigation | System Security | Networking | Windows Server | Linux | Secure Software Lifecycle | Encryption Protocols | Penetration Testing | Ethical Hacking
- → **Web & Application Development**: React | Node.js | Django | Flask | Spring | API Integration | Frontend Development | Backend Development | Database Management | MongoDB | Web Services

PROFESSIONAL EXPERIENCE

SOFTWARE ENGINEER

MiTek AtlasIED | Sandy, UT | Apr 2024 – Sep 2025

- Delivered secure, high-performing commercial software that enhanced reliability and usability across AtlasIED product lines.
- Strengthened code security and compliance by applying best-practice development standards and eliminating vulnerabilities through rigorous testing.
- Improved software stability by identifying root causes of system issues and implementing durable fixes that reduced recurring faults.
- Advanced team productivity by introducing Agile routines and CI/CD practices that kept development on schedule and documentation consistent.
- Enhanced system performance through optimized C/C++ and Python code, improving execution within embedded and connected environments.
- Increased delivery consistency by containerizing key applications and automating deployments across hybrid platforms.
- Raised overall code quality through peer review, documentation updates, and collaboration with engineers to refine architecture and maintainability.
- Supported a culture of innovation by suggesting tool improvements and workflow changes that streamlined project execution and knowledge sharing.

INTERN

Department of Defense – DEVCOM Army Research Laboratory | Adelphi, MD | Jun 2024 - Aug 2024

- Delivered a working AI prototype that helped the research team better anticipate new defense technologies and plan future projects.
- Improved data handling by combining GPT-4 with the LangChain framework to collect and interpret information from multiple sources.
- Simplified data gathering by creating custom tools with Firecrawl API, reducing the time needed to access and analyze research material.
- Helped identify upcoming technology trends by training machine learning models on past and current datasets.
- Supported responsible AI use by recording model performance and outlining steps to improve accuracy and safeguard sensitive information.
- Shared research findings and suggestions that shaped the direction of ongoing AI development within secure Army programs.

GRADUATE RESEARCH ASSISTANT
Florida International University | Miami, FL| Nov 2022 - Dec 2023

- Strengthened UAV cybersecurity by leading research and algorithm development for an NSA-funded project at the Analytics for Cyber Defense Laboratory.
- Enhanced system resilience to side-channel attacks through data analysis, simulation, and targeted experimentation.
- Contributed to the development of new defense methods that improved UAV protection against potential cyber threats.

SENIOR Machine Learning Engineer
Neox LLC | Miami, FL| Apr 2017 - May 2023

- Delivered an automated trading robot built through algorithmic trading and MQL5 programming, improving speed and accuracy in trading execution.
- Applied LSTM neural networks to forecast RPC patterns, enhancing system performance and overall technological efficiency.
- Partnered with company leadership to strengthen operations, aligning technical development with business goals and industry standards.

RESEARCH & PROJECT WORK

Side-Channel Intrusion Detection for UAVs - Florida International University

- Developed and tested intrusion detection algorithms using side-channel data to improve UAV resilience against cyberattacks.
- Conducted research under an NSA-funded initiative at the Analytics for Cyber Defense Laboratory, focusing on practical applications of machine learning for mission-critical systems.

Large Language Model Forecasting Prototype - U.S. Army DEVCOM Research Laboratory

- Built a GPT-4 and LangChain-based AI tool to forecast emerging defense technologies and support strategic planning.
- Integrated Firecrawl API and custom PDF loaders to streamline secure data collection and analysis for research use.

Automated Trading System - Neox LLC

- Designed and deployed an MQL5-based trading robot powered by LSTM neural networks to forecast market trends.
- Improved execution accuracy and reduced manual input by combining algorithmic trading logic with deep-learning prediction models.

Cloud-Based License Plate Recognition System - ShellHacks (AutoNation)

- Implemented computer vision and RESTful APIs on Google Cloud to enhance real-time vehicle identification.
- Used MongoDB and deep-learning models to achieve faster and more accurate recognition.

Waste Monitoring IoT Network - Florida International University

- Created a network of IoT sensors connected through Firebase for real-time data tracking and analysis.
- Reduced operational complexity by integrating low-cost hardware with cloud-based analytics.

High-Voltage Resonant Field Study - Florida International University

- Designed circuits and experiments to analyze molecular behavior under high-voltage resonant fields.
- Trained students and lab teams in analytical methods including electron emission, magnetic field measurement, and optical interferometry.

EDUCATION & CERTIFICATION

Doctor of Philosophy (Ph.D.) in Electrical & Computer Engineering
Florida International University, Miami, FL | Jan 2024 – Present

Master of Science in Computer Engineering
Florida International University, Miami, FL | May 2021 – Dec 2023

Bachelor of Science in Computer Engineering
Florida International University, Miami, FL | Apr 2015 – Apr 2021

→ Microsoft Certified: Azure Fundamentals
→ Microsoft Certified: Azure AI Fundamentals
→ Certified Network Technology Associate
→ CCNA: Networking for Home and Small Businesses
→ CompTIA A+: Certified PC Technician
→ CompTIA Network+: Certified Network Repair Technician