

ADEEB ALQAHTANI

Senior Software Integration & Embedded Software Engineer

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Summary

Senior Software Integration Engineer with 10+ years of experience developing advanced systems for simulation and mission-critical defense applications. My work spans embedded systems, interface electronics, and real-time middleware – often integrating modern techniques into complex, high-performance environments. I led the design and implementation of the **Cougar Helicopter Full Mission Simulator – Middleware System Development**, a custom C++ middleware that integrates Host, Computer-Generated Forces (CGF) and Image Generator (IG). I hold a **B.S. in Computer Engineering from California State University, San Bernardino (CSUSB)** and a **Deep Learning Nanodegree from MISK Foundation**. My work also includes circuit design, microcontroller programming.

Experience

Rheinmetall Arabia For Simulation and Training Riyadh
Senior Software Integration & Embedded Software Engineer 11/2024 - Present

- Developed **API and middleware solutions** for real-time data integration, enabling smooth communication between host systems, Image Generator, and external components.
- Provided technical consultation and advanced troubleshooting support to resolve complex issues.
- Led integration of simulation and training systems, managing the full development cycle.
- Designed and documented system architecture for simulator upgrades, new technology adoption, and AI-enhanced capabilities.

PSAA Engineering Dpt. Jeddah
Flight Simulator Engineer 01/2019 - 10/2024

- Led the qualification, testing, commissioning, and certification of Full Flight Simulators, ensuring strict compliance with aviation standards (**FAA, EASA & GACA**).
- Provided expert troubleshooting for complex technical challenges, ensuring timely resolution and minimal downtime.
- Collaborated on system integration and performance optimization to improve simulator reliability and operational efficiency.

PSAA Technical Servesis Dept. Jeddah
Flight Simulator Maintenance Supervisor(D) 01/2024 - 06/2024

- Led a technician team to enhance operations, and training readiness, ensuring effective coordination and smooth performance.
- Monitored performance and ensured compliance with safety and regulatory standards, providing reports to support decision-making and improvements.

PSAA Technical Servesis Dept. Jeddah
Full Flight Simulator Technician 04/2010 - 12/2013

- Maintained and optimized flight simulators, ensuring realistic and reliable performance for pilot training.
- Configured single-board computers, modified interface cards, and upgraded I/O units for seamless system integration.
- Installed, calibrated, and aligned instrument panels, visual systems, and motion platforms for enhanced realism.
- Improved uptime to meet specific training requirements through efficient troubleshooting and modifications.

Education

California State University San Bernardino 01/2015 - 06/2018
B.S. in Computer Engineering

- Focused on **high-performance and embedded systems** with strong emphasis on digital logic, electrical design, and robotics. Included intensive coursework in physics, and math, along with extensive programming in C, C++, Python, and Verilog.

Education

Yanbu Industrial College

08/2004 - 06/2008

Associate Degree in Electrical and Electronics

- Specialized in **Instrumentation and Control Systems**. Covered electrical fundamentals, sensors, PLC programming, and process control. Emphasized hands-on training in industrial automation, signal conditioning, and calibration.

MISK

08/2019 - 01/2020

Deep Learning (AI) Nanodegree

- Hands-on training in neural networks, CNNs, RNNs, and GANs using Python, PyTorch, and TensorFlow. Completed projects in **data science, image classification, sentiment analysis, and AI-based generative modeling**.

Canadian Aviation Electronics

05/2009 - 04/2010

Intensive Training Program

- Hands-on training on CAE simulators covering electrical motion systems, interface systems, computer networks, system diagnostics, and technical documentation interpretation

PROJECTS

Cougar Full Mission Simulator – Middleware System Development

Designed and programmed a middleware system for the Cougar Full Mission Simulator, integrating five critical subsystems using C++, Boost, Open DIS, CIGI Class Library (CCL), and shared memory pipelines. This solution provided reliable real-time synchronization and sub-millisecond latency.

National Guard Simulator Operations & Maintenance Project

Managed acceptance testing, inventory, and performance for 8 simulators (4 Black Hawk, 4 Apache) at two National Guard sites. Ensured operational readiness and trained maintenance staff.

TRAINING/COURSES

1000+ hours achieved in technical training from Canadian aviation electronics, Thales, L3Harris and Collins Aerospace

SFATE Developer Certificate from TÜBİTAK Defense Industry Research and Development Institute.

PMP Course

Proposal Writing & Management

Databases and SQL for Data Science with Python

Python for Data Science & AI

SKILLS

leadership and management skills: Problem-solving · Interpersonal Skills · Strategic Thinking · Time Management

Hardware: Circuit design · Electronics · Microcontrollers · Robotics · Field Programmable Gate Arrays (FPGA)

Software: C/C++ · Python · LLM · Llama · Mistral · NumPy · Pandas · TensorFlow · PyTorch