

Abdelgadir Osman

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EDUCATION

The University of Texas at Austin

Electrical & Computer Engineering – Software Engineering & Design – GPA: 3.6

Coursework: Software Design & Implementation II, Algorithms, Digital Logic Design, Embedded Systems, Circuit Theory, Linear Systems & Signals

Austin, TX

Anticipated May. 2027

SKILLS

- **Languages:** Python, C, C++, C#, HTML, Java, JavaScript, Verilog, SQL
- **Frameworks/Libraries:** PyTorch, TensorFlow, OpenCV, Pandas, NumPy, Matplotlib, REST APIs, Anomalib
- **Certifications:** JPMC Software Engr. Job Simulation, Ford Digital Advanced & EV Engineer Job Simulation
- **Software:** Visual Studio, IntelliJ IDEA, Cloud Vision API, Jetson Nano, Apache Kafka & Maven, RestAPI

EXPERIENCE

Flex

Software Engineering Intern

Austin, TX

May 2025 – August 2025

- Developed and deployed an AI visual inspection system for motherboards, leveraging Anomalib Patchcore and transferring learning on extensive datasets to accurately detect over 10 distinct critical defects.
- This AI solution saves hours and ~\$27,405 quarterly by identifying defects much earlier in the production cycle, drastically cutting rework costs, and eliminating significant manual inspection time.
- Built a VMI/Receiving automation system on the NVIDIA Jetson Nano using Google Vision API and Python to detect and scan incoming boxes and auto-populate part, box, location, etc. speeding up operations by hours daily

UT Austin

Machine Learning Engineer, Research Assistant

Austin, TX

Jan 2024 – Apr 2024

- Developed and trained AI models using Python and TensorFlow to analyze medical imaging and patient datasets, enhancing diagnostic accuracy and efficiency through advanced machine learning techniques.
- Conducted data preprocessing, feature extraction, and statistical analysis to optimize model performance, ensuring robust and reliable predictive outcomes.
- Collaborated with a multidisciplinary team to design and validate AI-driven solutions for personalized medicine and improved patient care.

PROJECTS

Customer Database Management System

C++, Object-Oriented Programming

Mar. 2025

- Developed a C++ system for managing customer and inventory data to support automated transaction processing for a small business simulation.
- Implemented optimized search and update operations, improving query efficiency by ~30% through pointer-based dynamic structures.
- Helped streamline data management workflows by reducing manual tracking, enabling faster record updates across hundreds of customers.

Space Invaders Embedded Video Game

Embedded C – Circuit Design

Dec. 2024

- Developed a handheld video game on the TI MSPM0+ microcontroller, integrating an LCD display, slide potentiometer, and buttons for comprehensive user interaction.
- Implemented an interrupt-driven software architecture, leveraging ADC for real-time potentiometer input and DAC for sound generation.
- Engineered a modular codebase with custom sprite rendering, emphasizing scalability and adaptability for future growth.

Traffic Light FSM

Embedded Systems - C

Nov. 2024

- Architected and implemented a microcontroller-based Traffic Light Controller in C, interfacing with LEDs to simulate a two-street intersection and pedestrian walkway.
- Developed the software architecture for a robust Finite State Machine (FSM) to precisely control traffic light sequences and ensure sound transitions.
- Seamlessly integrated software logic with hardware components on a circuit, demonstrating effective application of embedded programming.