Abdelgadir Osman

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EDUCATION

The University of Texas at Austin Austin, TX
Electrical & Computer Engineering – Software Engineering & Design – GPA: 3.6 Anticipated May. 2027
Coursework: Software Design & Implementation II, Algorithms, Digital Logic Design, Embedded Systems, Circuit Theory, Linear Systems & Signals

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 Austin, TX
Software Engineering Intern 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 data, etc.
- Trained the system to recognize varied label formats and box types, reducing reliance on manual entry and speeding up receiving operations by hours daily

UT Austin Austin, TX
Undergraduate Student Researcher 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

Space Invaders Embedded Video Game Dec. 2024
Embedded C – Circuit Design
- 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 and multilingual support, emphasizing scalability and adaptability for future growth.

Traffic Light FSM Nov. 2024
Embedded Systems - C
- 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.