SALAH-ELDIN HASSEN

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SUMMARY

Dynamic and adaptable Software Engineer with extensive experience across embedded, digital, and web technologies. Proficient in C/C++ and Python, I excel at leveraging advanced AI tools to transform innovative ideas into robust, production-ready solutions. A fast learner and effective collaborator, I bring a creative, forward-thinking approach to solving complex technical challenges.

EDUCATION

▪ **Cairo University Faculty of Engineering, Department of Electronics and Electrical Communication Engineering (CUFE EECE) // 2021 - 2026.**

WORK EXPERIENCE

▪ **Robotics & Embedded Instructor // Beta Engineering Training Academy // Seasonal // Jan 2023 - Present.**
  • Promoted from Technical Support to Lead Instructor for Arduino and AVR embedded systems, instructing 600+ students in programming and hardware integration with consistently positive feedback.
▪ **Coding AI Trainer // Outlier // Freelancing // Nov 2024 - Dec 2024.**
  • Trained and optimized AI models for coding tasks through iterative evaluation, scenario-based testing, and targeted training frameworks to enhance code generation accuracy and algorithmic proficiency.
▪ **Data Entry Clerk // Covo Connect // Full time // Jun 2023 - Jul 2023.**
  • Entering banking data from photos to text, improving touch-typing skills.

SKILLS

▪ **Software:** C / C++ - OOP - MATLAB - Assembly - Rust - Data Structures - Algorithms - Python - Automation - Scripting - Kali Nethunter - Ubuntu - Debian - AI tools - Qt - Git & Git-Hub - Latex.
▪ **Embedded:** Atmega16/32 (AVR) - PIC18F2XK20/4XK20 (PIC) - STM32 - Fundamentals of Embedded Systems - ARM Cortex-M Architecture - Embedded C - FreeRTOS - I2C - USART - SPI - SOMEIP.
▪ **Digital:** HDL languages (VHDL, Verilog, System Verilog).
▪ **Web:** HTML5 - CSS3 - JavaScript - Bootstrap - jQuery - Laravel - SQL.

PROJECTS

▪ Concurrent Rust TCP Server with Test Suite Optimization
  • **Description:** Developed a multithreaded TCP server in Rust with enhanced client handling and optimized testing.
  • **Key Elements:** Rust, Multithreading, Protocol Buffers, Thread Safety, Non-blocking I/O
▪ SFML Chess Game in C++
  • **Description:** Built a chess game using C++ and SFML featuring valid move highlighting and an undo option.
  • **Key Elements:** C++, SFML
▪ FreeRTOS-Based Dual Microcontroller Door Locker
  • **Description:** Developed a door security system using two microcontrollers with FreeRTOS, featuring password authentication and I2C EEPROM storage.
  • **Key Elements:** ATMega32, I2C, USART, EEPROM, FreeRTOS
▪ Advanced Digital Multimeter on PCB
  • **Description:** Developed a PCB-based digital multimeter capable of measuring voltage, current, and resistance with specified ranges.
  • **Key Elements:** ATMega32, PCB, GPIO, LCD, ADC
▪ Laravel Workshops System
  • **Description:** Developed a Laravel-based system to manage workshop sessions, including scheduling, registration, and attendance tracking.
  • **Key Elements:** Laravel, PHP, MySQL, Bootstrap, Git

COURSES

▪ **SOME/IP Workshop**

- **Description:** Workshop covering SOME/IP protocol with hands-on client-server communication in networked embedded systems.
- **Advanced Embedded Diploma**
  - **Description:** Diploma covering ARM Cortex-M4 architecture, embedded system development, device drivers, bootloaders, and automotive protocols.
- **Digital Design and Verification Diploma**
  - **Description:** Diploma focusing on digital/RTL design, Verilog/SystemVerilog, FPGA design, and verification techniques.
- **Linux Fundamentals**
  - **Description:** Course covering Linux basics, file management, shell scripting, process control, and web server setup.