

MOHAMED MAGDI

Software engineer

Dedicated software engineer with a passion for crafting efficient and innovative solutions. Committed to continuous learning and growth in the ever-changing tech landscape. Excited about contributing to meaningful projects and collaborating with diverse teams.

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EDUCATION

Bachelor of Computer Engineering (Very Good)

Helwan University

2023

Cairo, Egypt

WORK EXPERIENCE

Software developer

Sudo Techs

08/2023 - Present

Cairo, Egypt

Achievements/Tasks

- Developed and implemented MCAL drivers, including UART, timers, interrupts, SPI, I2C, STK, NVIC, and AFIO, for a robotic system, optimizing hardware functionality and communication protocols.
- Contributed to advanced troubleshooting and real-time system responsiveness, leveraging a 3-5 year background in Computer Engineering and Computer Science.
- Contributed to a Python class for LiDAR data collection, showcasing a developing proficiency in robotics data acquisition and processing.

Embedded software engineer

Ultron medical (part-time)

01/2021 - 01/2023

Cairo, Egypt

Achievements/Tasks

- Proficient low level arm microcontroller communication including USART and I2C protocols.
- Utilized sensor fusion to integrate data from various sensors, including blood pressure sensors, voltage sensors, and current sensors, in the development of a medical device.
- Effectively interfaced a TFT screen for sensor data display and alarm notifications through USART communication within the system.
- Implemented FreeRTOS and task scheduling, utilizing FreeRTOS APIs like semaphores, mutexes, and buffers, to efficiently manage device tasks with defined priorities. Additionally, the system effectively handled alarms within the FreeRTOS framework.
- Incorporated watchdog timers to safeguard the system against potential failures like fault detection ensuring robust operation.
- Implemented Direct Memory Access (DMA) peripheral interfacing to enhance data transmission speed and efficiency within the system.
- I conducted module-level testing, created test strategies. Collaborated effectively with team members and stakeholders to understand business requirements.

SKILLS

C

C++

C++20

Python

Java

OOP

OOD

Agile workflow

Embedded systems

Linux

Docker

Jira

jenkins

ansible

AWS

PERSONAL PROJECTS

Automated Warehouse System (graduation project) (07/2022 - 07/2023)

- Used cutting-edge technologies, including Machine Learning, Reinforcement Learning, ROS2, and simulation tools, while incorporating embedded system concepts to drive innovation.
- Designed hardware interfaces and embedded systems, enhancing seamless communication and control between robots, leveraging protocols like I2C.
- Utilized FreeRTOS to schedule tasks for sensor data acquisition and robot motion control, ensuring efficient and real-time operation of the automated warehouse robot system.
- Implemented 2D SLAM for mapping and path planning in a dynamic multi-robot ecosystem.
- Created an intuitive real-time data visualization dashboard, enabling warehouse proprietors to make data-driven decisions with ease.

Students Attendance System (01/2021 - 01/2022)

- Developed a comprehensive student attendance management system in Java, utilizing JavaSwing for the user interface and Mysql to manage and store data.
- Implemented features enabling student enrollment in courses, and seamless assignment of these courses to respective instructors.
- Implemented unit tests using JUnit to ensure the reliability and functionality of the system, demonstrating a commitment to software quality.
- performance tests using Apache JMeter to evaluate the attendance system's scalability. Insights gathered aided in refining system performance, ensuring a reliable user experience.

CERTIFICATES

FreeRTOS Hands-On (08/2022)

Proficient in RTOS multitasking, access synchronization, event synchronization, task communication, task notification, software timers, memory management, and interrupt handling.

Embedded System Advance-Nanodegree (04/2022)

Completed an intensive Embedded Masterclass ARM Cortex-M Architecture, RTOS, Embedded Software Design, Safe Coding (MISRA), and Agile methodologies.

LANGUAGES

English

Full Professional Proficiency

French

Limited Working Proficiency