Amr Mohamed Taha Ibrahim

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Objective

Motivated computer science graduate eager to apply theoretical and practical knowledge in embedded systems. Seeking an opportunity to contribute to hardware-software integration and learn from industry professionals.

Education

B.Sc. in Computer and Control System Engineering

Faculty of Engineering, Mansoura University (Sept 2019 – Jul 2024)

- **Grade**: *Excellent* (85.56%)
- **Graduation Project**: *Excellent*
  - **Title**: Driving AI Guardian
  - **Description**: Developed a Vehicle-to-Vehicle (V2V) communication system to enhance driving safety using Raspberry Pi, STM32F103C8T6 microcontroller, and embedded Linux. The project incorporated real-time monitoring, computer vision, and AI for obstacle detection and collision prevention, optimizing algorithms to create a reliable and cost-effective safety solution for autonomous vehicles.

Professional Experience

- **Embedded Software Engineer (Contractor),** POEM Italy – Remote (Nov 2023 – Present)
  - Developing solutions for a smart greenhouse, including various types of sensors and actuators.
- **Freelance Embedded Software Engineer,** Fiverr (Jul 2023 – Present)
  - Delivered custom solutions including firmware development, microcontroller interfacing, and debugging.
  - Demonstrated excellent communication and client management skills.
- **Embedded Software Engineer,** STIPS Egypt (Jun 2022 - Sep 2023)
  - Develop and implement software for embedded systems, focusing on efficiency and performance.
  - Prototype new versions of IoT devices to enhance decision-making capabilities.
  - Test and validate IoT devices' software and hardware to ensure functionality and reliability.
  - Design and implement automation solutions using frameworks like Home Assistant.

Technical Skills

- **C/C++ programming**
- **Embedded C**
- **RTOS** (FreeRTOS)
- **Embedded software design**
- **Microcontroller’s architecture**
- **Peripherals**
  GPIO - ADC - TIMERS - EXTI - DMA - WDT
- **Communication Protocols**
  SPI - I2C - UART - MQTT - HTTP - BLE - WiFi - LoRa
- **Interfacing**
  Displays - Keypad - Motors - Accelerometer
  EEPROM - various of MCUs - various of sensors
- **OOP**
- **MISRA C rules**
- **ISTQB basic knowledge**
  Black Box - White Box Testing
- **Problem-solving skills**
  Data structures - Algorithms
- **Python Programming**
- **Development tools**
  STMCube IDE - Keil uVision - Proteus - Altium Designer - SEGGER SysView - Git & GitHub - MS Office

Projects

- **Smart Green-House** using Raspberry Pi 5 to manage MQTT messaging, MongoDB data logging, and AWS S3 storage, while ESP32 units control actuators based on commands from the Pi – under NDA. (Oct 2025)
- **Bee's Venom Collector** is a multifunctional device using the STM32F103C microcontroller, integrating a rotary encoder and OLED screen for user interaction. The device generates pulses with user-controlled frequency, and monitors and controls voltage through a PWM-based system – under NDA. (May 2024)
- **On-Demand Traffic Light Control:** a traffic light control system with automatic timing and pedestrian mode using the ATmega32 microcontroller. Repository: GitHub (Feb 2023)
- **Mini Compiler:** a compiler (Wordlang) with lexical, syntax, and semantic analysis phases, generating C code as output. Applied algorithms to construct symbol tables and Abstract Syntax Trees (AST). Repository: GitHub
- **Payment System using C & Python:** a payment system to validate user card data against a database and generate formatted bills using Python. Utilized advanced C concepts like pointers, file handling, and preprocessors for efficient integration and teamwork. Repository: GitHub (Oct 2022)

Certifications & Training

- **Mastering RTOS: Hands-on FreeRTOS and STM32Fx with Debugging,** Udemy (2024)
- **Embedded System Professional Nanodegree,** Udacity (2023)
- **Microcontroller Interfacing with AVR,** National Telecommunication Institute (2021)
- **C & Embedded C Programming,** National Telecommunication Institute (2021)

Internships

- **Graduation Project Mentorship,** Valeo Egypt (Nov 2023 - Aug 2024)
- **IoT & Computer Vision,** Sparks Academy, Singapore (Jan 2023 - Mars 2023)

Soft Skills

- Excellent Communication and Presentation Skills
- Strong Problem-Solving Ability
- Continuous Learner
- Self-Motivated and Organize

Volunteer Experience

- **Embedded Systems Circle,** CAT Reloaded, Mansoura University (Dec 2021 - Oct 2023)
- **HR Circle,** CAT Reloaded, Mansoura University (Dec 2021 - May 2022)

Languages

- **Arabic:** Native
- **English:** Fluent

Military Service

Final Exemption