Eslam Elsaid Nasr Eldin

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Objective

As a skilled Automotive Embedded Software Engineer with knowledge in Developing & feature handling , C ,Embedded C, ARM, RTOS. my objective is to secure a position as an Automotive Embedded Software Developer in a reputable multinational company that offers a dynamic and professional working environment.

Education

Faculty of Engineering – Mansoura University **(2020 – 2025)**
BSc, Electronics & Communication Department
Accumulative Grade: Very good (81.85%)

Graduation Project

Digital Vehicle Key System – Team Leader **(Sep 2024 – Jul 2025)**

Sponsored by Swift Act

Led my team in developing a secure, smartphone-based vehicle access system that replaces traditional car keys using BLE and NFC technologies. The system featured passive entry/start, remote access, key sharing with time-limited permissions .

Role: Team Leader and Lead Developer for CAN communication and Cybersecurity.
CAN Bus Integration: Implemented vehicle-side communication over the CAN bus for BLE-based proximity sensing and access control decisions.
Cybersecurity: Developed the secure authentication sequence, using RSA for secure key exchange and AES-256-GCM for encrypted communication between the vehicle and mobile application.

Courses

Introduction to Automotive Cybersecurity **(October 2024)**

- Confidentiality, integrity, and authenticity concepts
- Symmetric encryption (AES) and asymmetric encryption (RSA)
- Hybrid encryption (combination of symmetric/asymmetric)
- Shared secret generation and exchangeMessage authentication concepts
- Public Key Infrastructure (PKI) and certificate handling

Advanced embedded systems diploma (August 2023 – October 2023)
(ARM architecture & STM interfacing)

- Memory map and bus system
- Debugging techniques
- Processor modes , Inline assembly
- Reset sequence and instruction set
- Stacking , Exceptions and interrupts , Fault Handling
- STM clocking system , RCC peripheral
- GPIO, SYSTIC ,NVIC , DMA

Embedded systems diploma (September 2022 – July 2023)

- C, Embedded C, Data structures, Algorithms.
- Microcontroller architecture.
- Avr interfacing: DIO,Interrupts, ADC, Timer, PWM, ICU, UART,SPI, I2C.
- External components:LEDs,Seven segment, Switches,LCD, Keypad, Transistors,
- optocouplers
- relays,darlington pairs, DC Motor, Servo motor, DAC, LM35, LDR,
- potentiometer,USB-TTL,Bluetooth, Ultrasonic, I2c EEPROM.
- CAN, LIN.
- Communication bus sniffing using USB logic analyzer.
- Version control using git, github cloud.
- RTOS : simple scheduler and freeRTOS porting.
- used tools: npp, GCC command line, Eclipse IDE, Saleae logic analyzer GUI,
- putty, bluettoth terminal.
- Graduaion project : Semi smart home

Projects

- **Alarm System** (GitHub) (Linkedin) **(August 2024)**

  Team Size: 3

  Technologies: STM32 (Bluepill & Nucleo), DS1307 RTC, UART, I2C, GPIO, USART, CLCD, SYSTICK

  Tools: STM32CubeIDE, Logic Analyzer, Putty

  Description: Developed an embedded alarm system with secure login, real-time clock management, and multi-alarm functionality. The system allows users to set up to 5 alarms and interact via Putty terminal, displaying time and alarms on both terminal and LCD.

  Key Contributions:

  1) Implemented UART communication between Bluepill and Nucleo boards, and I2C interface with DS1307 RTC.
  2) Developed a secure login system with 3 attempt limits, LED status indicators, and alarm notifications via buzzer and LEDs.

3) Debugged and monitored UART data flow using a logic analyzer.

- **Smart home (GitHub) (Linkedin) (July 2023)**

  Semi smart home using AVR atmega32 microcontroller

  -> Control the home with voice command using mobile
  (bluetooth module and USART)
  -> Login system using Keypad and CLCD and you have only 3 Attempts
  -> Using ADC peripheral in microcontroller to measure the analog volt from
  LDR sensor then Map this volt to control light intensity using LED array
  -> Control The angle of servo motor using PWM signal generated by Timer 1
  by modifying Compare match value to control the duty cycle of PWM signal
  -> Using Potentiometer and ADC to measure the analog volt and map it to control the speed of the DC motor by PWM signal generated by Timer0 by modifying the duty cycle

- **Remote Health and Location Monitoring System (December 2023)**

  Developed a system that measures heart rate using a heart rate sensor and tracks location with a GPS NEO-6M module. Transmitted real-time health and location data via SMS using a SIM800L GSM module, showcasing skills in embedded systems and IoT applications.

- **Car workshop (GitHub) (march 2023)**

  -> Software application designed to manage a workshop with this features :
  1. Add a New Customer.
  2. Serve a Customer.
  3. How many Customers are waiting?
  4. Display Customers Information.
  5. Display Customers information in a "most-recent" Order.

  -> Using data structure Stack and Queue

Technical Skills

- C / Embedded C
- Data Structures (Stack, Queue, Linked list)
- AVR Interfacing
- ARM architecture
- Embedded Interfacing with different microcontrollers
  (STM32F103C6, ATMEGA32, STM32F446RE)
- Communication Protocols (UART – SPI – I2C – CAN – LIN)

- RTOS
- Version Control Systems(Git)

Tools

- Git / GitHub
- IDEs (Eclipse - Stm32 Cube – Visual Studio)
- Simulators (Proteus)
- Notepad++

Extracurricular Activities

- Head of embedded systems circle (Breakin Point team) Apr 2024 – Present
- Embedded system supervisor (Breakin Point team) Jan 2023 – Apr 2024

Languages

Arabic (Native). English (Very good).

Non-Technical Skills

- Leadership
- Communications skills
- Time management
- Teamwork