Shady Soltan
Embedded Software Engineer

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SUMMARY

Embedded software engineer with a focus on automotive systems. Proficient in data structures, algorithms, and AUTOSAR standards. Skilled in troubleshooting and debugging code. Strong problem-solving abilities with a commitment to delivering efficient solutions. Excellent communication skills and eager to learn and contribute within a collaborative team environment.

EDUCATION

EDGES TRAINING — NASR CITY, CAIRO
EMBEDDED SYSTEMS ADVANCED DIPLOMA (ARM & AUTOSAR) — JAN 2024-MARCH 2024

EMBEDDED AUTOMOTIVE AND AUTOSAR DEVICE DRIVERS COURSE AT EDGES FOR TRAINING ACADEMY AND UNDER SUPERVISION OF ENGINEER MOHAMED TAREK:

- AUTOSAR Layered Architecture.
- AUTOSAR Device Drivers.
- AUTOSAR and C Misra Rules.
- Automotive buses Lin and Can.
- Implement Dio and Port AUTOSAR Driver for TM4C Micro-controllers.
- Final project to apply the full layered architecture model.

ARM ARCHITECTURE BASED ON TM4C MICRO-CONTROLLERS COURSE AT EDGESs FOR TRAINING ACADEMY AND UNDER SUPERVISION OF ENGINEER MOHAMED TAREK:

- ARM Cortex-M Architecture and Programming Model.
- TM4C Micro-controller GPIO Driver.
- ARM CortexM3/M4 SysTick Timer Driver.
- ARM CortexM3/M4 NVIC System:
- TM4C Micro-controller Edge Triggered Interrupts.
- ARM CortexM3/M4 System Exceptions: PendSV, SVC and SysTick Exceptions.
- ARM CortexM3/M4 Fault Exceptions: Hard-Fault, Usage-Fault, Bus-Fault and Memory-Management-Fault.
- ARM CortexM3/M4 MPU Driver.
- TM4C Micro-controller PLL Driver.

AMIT LEARNING — 6TH OF OCTOBER CITY, AL JIZAH
EMBEDDED SYSTEMS BASIC DIPLOMA — JAN 2023-JULY 2023

- C Programming & Data Structures
- Embedded Tools: Atmel Studio, Eclipse, and Proteus
- Embedded C Programming: Developed skills in programming microcontrollers using C.
- Interfacing Protocols: Studied SPI, UART, and I2C protocols, including principles, configuration, and implementation for connecting embedded systems with external devices.
- Real-Time Operating Systems (RTOS): Explored RTOS concepts (task scheduling, inter-task communication, synchronization, memory management) for embedded systems.
- Testing and Validation
- Automotive Bus Technology: Studied CAN and LIN for communication in automotive embedded systems.

NILE UNIVERSITY **6TH OF OCTOBER CITY, AL JIZAH**

BACHELOR OF COMPUTER SCIENCE **SEP 2016-SEP 2020**

- Completed a comprehensive undergraduate degree in Computer Science, covering theoretical concepts and practical skills essential for software development and computer systems.
- Proficient in programming languages like C, C++, and Python, with experience in software development methodologies such as agile and waterfall.
- Developed analytical, problem-solving, and teamwork skills through participation in projects and practical assignments, preparing for a successful career in computer science.

PROJECTS

AUTOSAR Project:

Implemented DIO and PORT drivers adhering to AUTOSAR SWS version 4.0.3 standards. Developed an ECU layer for LED and BUTTON drivers, alongside a Service Layer featuring a scheduler and DET module. Ensured precise button state detection logic with output refresh every 40ms. Created compiler and platform types for Tiva-C board TM4C123GH6PM MCU. Maintained code readability with standard types and macros. Delivered a robust, scalable embedded systems framework, aligning with AUTOSAR standards for compatibility and reliability.

Tiva™TM4C123GH6PM Microcontroller Drivers:

Developed in C using Texas Instruments' Code Composer Studio, this project focuses on creating drivers for TIVA C Launchpad's essential peripherals. The drivers include GPIO, LEDs, SysTick, PLL, NVIC, SVC, PendSV, MPU, and UART modules.

Smart-Home Project:

Designed and implemented a Smart Home Project utilizing two Atmega32 microcontrollers with interfacing capabilities for SPI, UART, and I2C (External EEPROM), along with peripherals including LCD, Keypad, DC-Motor, Servomotor, LEDs, LM35 Temperature sensor, and TIMER1 using layered architecture. The project features two modes: an Admin mode accessed through UART, and a user mode operated via LCD and Keypad for issuing commands. Implemented a temperature control system using Timer1 and LM35 to monitor room temperature with ADC precision at one-second intervals.

Additionally, a second version of the project was developed, utilizing two Tiva-C boards TM4C ARM-based MCUs, expanding the capabilities and performance of the Smart Home system. Developed drivers according to AUTOSAR standards SWS 4.0.3 and applied them using abstraction layers.

Obstacles Avoiding Car:

Implemented a self-driving car using Arduino UNO, Ultrasonic sensor, Motor Shield, four DC motors, and one Servo motor. The car features obstacle avoidance capabilities, using the Ultrasonic sensor to detect obstacles and autonomously changing direction to avoid them.

Calculator using Atmega32:

Implemented an interface using LCD and Keypad to input mathematical equations, displaying them on the LCD for verification. Upon pressing the "=" button, the system computed and displayed the result of the equation on the LCD.

CERTFICATIONS

- Problem Solving (Intermediate) Certificate - Hackerrank
- AUTOSAR Architecture (Learn from Scratch with Demo) – Udemy
- Software Engineer Certificate - Hackerrank