Ahmed Sayed Mohamed

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EDUCATION

Egyptian Academy for Engineering and Advanced Technology Affiliated to the Ministry of Military Production

Bachelor of Mechatronics with accumulative grade: Very Good *Graduated: July 2023*

MILITARY STATUS

Exempted

EXPERIENCE AND ELECTIVE COURSES

Advanced embedded software Feb 2024

Course by Ahmed Abdulgaffar

- Arm architecture.
- RTOS (FreeRtos,Osek Os)
- Safe coding with MISRA
- Intro to Automotive Cybersecurity

Full Embedded Systems Diploma under supervision: Mohamed Tarek OCT 2022

The Diploma covered the following topics:

- Basic Concepts of Embedded Systems and Cprogramming.
- Data Structures (Linked-List, Stack and Queue).
- AVR Micro-controllers Interfacing (Implementallthedrivers).
- CFor Embedded Applications (Embedded C).
- Real Time OS(RTOS) and Softwareengineering.
- Embedded Tools.

Trainee / Factory 999 Military Production Sept 2021

Trainee / Factory 200 Military Production Aug 2020

Mechanical Engineer Intern / Renault Sept 2019

The internship covered the following topics:

- Experience in identifying Vehiclefaults.
- Experience in dealing with diagnostictools to identify the causes of malfunctions.

PROJECTS

Graduation Project Smart PLC-Based Car Washing Machine June 2023

- We designed and implemented automatic fault detection touchless car washing machine using different types of sensors to detect different types of errors that may occur in the system. The system will be controlled and monitored using a PLC with a touch-graphical HMI. The system will be operated and monitored through the touch HMI. The software running on the PLC will be designed such that a wide range of faults will be automatically detected. Detected faults will be displayed on the HMI in a very specified way for quick corrective actions to reduce downtime and hence increase productivity.

  My Role

  • Team Leader of the group
  • Designing the software part of the HMI
  • Designing the fault part of the machine

  Grade: A+

Stopwatch: Developing a system that controls the stop-watch time and displays it.

Fan Speed Controller with temperature: Developing a system that controls the speed of a fan depending on the temperature.

- Drivers: GPIO, ADC, PWM, LM35 Sensor, LCD and DC-Motor-Microcontroller: ATmega32

Distance Measuring System: Developing a system that measures the distance and displays it on LCD.

- Drivers: GPIO, ICU, Ultrasonic Sensor, and LCD-Microcontroller: ATmega32.

The Door Locker Security System consists of two ECUs.

- The first ECU is called HMI responsible for interfacing with the user and the second ECU called the control ECU which is responsible for the system operations and control.
- In the project I implemented the following drivers Keypad, LCD, DC Motor, UART, Timer, I2C, and External EEPROM.

Simple Calculator: Developing a calculator to perform mathematical operations.

- The Calculator can handle any division operation by zero it gives math error.
- Handle Float Numbers Can Display up to 5 decimals after the dot.
- Can Reset Calculator via External Button to Reset if any Error Occurred.
- Drivers: GPIO, KEYPAD, LCD, INTERRUPT, Microcontroller: ATMEGA32

Laser Security system using Arduino.

- A laser-based security system is designed to provide maximum security to a given restricted area where the presence of any person is not desired. If someone tries to pass over the boundary line defined by laser lights, an alarm will be triggered using a buzzer, and an SMS to the authorized person will be sent through the GSM module.

Line follower robot using Arduino and Simulink

- Developing a small robot car to detect black line paths and run over them using IR sensors.

TECHNICAL SKILLS

Languages: C, Embedded C, JAVA, OOP, SQL
Hardware Peripherals: Gpio, Timers, Interrupts, ADC
Problem-solving and Data structures.
Real-Time OS (RTOS).
Familiar with classical Autosar layers.
Misra Rules.
Debugging Skills.
Communication Protocols: UART, SPI, I2C, CAN, LIN
Microcontrollers: Familiar with AVR (Atmega32), PIC 16F877A
Tools: Eclipse, Proteus, Code Blocks, MATLAB, Simulink, NetBeans