AHMED HASSAN

Embedded Software Engineer.

PROFILE

Computer and Systems Engineering Graduate interested in Embedded Systems and designing robust software & hardware systems to solve a variety of problems in different fields such as Automotive and Smart Homes.

Interests

- Embedded Systems.
- Applications Development.

Contact

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MILITARY STATUS

Exempted.

EDUCATION

2016-2021	**Bachelor's Degree ([Certificate](#))**
	Faculty of Engineering, Fayoum University

- Bachelor of Computer and Systems Engineering.
- *Graduation Project:* Sightful, an embedded device to help people with visual impairments to be more aware about surroundings. Technologies used: Embedded Linux (Raspberry Pi), AI and Machine Learning.

2013-2016	**High School ([Certificate](#))**
	Salah Salem High School in Fayoum

Science and Mathematics Division.

COURSES

Jun, 2019 - Nov, 2019	**Embedded Systems Diploma ([Certificate](#))**
	IMT School

- Embedded Systems Concepts and Embedded C Programming.
- AVR Micro-controller Interfacing.
- Tooling and Testing.
- *Final Project:* Mobile Controlled and Obstacle Avoidance Robot.

Jul, 2020 - Oct, 2020	**ARM Architecture Diploma ([Certificate](#))**
	IMT School

- ARM Architecture and Programming Model.
- STM32 Micro-controller Interfacing.
- IOT Concepts.
- *Final Project:* On the Air Programmer (OTA).

Mar, 2021- May, 2021	**Embedded Automotive and AUTOSAR Device Drivers ([Certificate](#))**
	Mohamed Tarek

- AUTOSAR Layered Architecture and Device Drivers.
- AUTOSAR and C MISRA Rules
- Automotive buses LIN and CAN.
- Implement DIO and PORT AUTOSAR Driver for TM4C Micro-controllers
- *Final Project:* Apply the full layered architecture model.

TECHNICAL SKILLS

- **Programming Languages.**
  C, C++, Java, Kotlin, Python and Dart.
- **Microcontrollers Interfacing.**
  AVR, STM, TIVA-C and PIC.
- **Sensors Interfacing.**
  PIR, IR, Ultrasonic and more.
- **Communication Protocols.**
  SPI, I2C, UART, CAN, LIN, USB.
- **IoT.**
  NodeMCU Board (ESP8266).
- **RTOS.**
  FreeRTOS and building simple Scheduler based on Time Triggered Embedded Systems.
- **AUTOSAR**
  AUTOSAR Layered Architecture and Device Drivers.
- **Mobile and Web Applications Development.**

PROJECTS

- **OS Scheduler (github.com/ahmadmhasann/os-scheduler).**

  OS Scheduler built to be used in STM32 Microcontroller.

- **MIPS Single Cycle Processor (github.com/ahmadmhasann/mips-processor).**

  Implementation of Single Cycle MIPS Processor in System Verilog.

- **AUTOSAR Drivers (github.com/autosar-drivers).**

  Implementation of AUTOSAR PORT and DIO Drivers for TM4C Micro-controller and implementing its configuration tool to generate configuration files automatically.

- **OTA Programmer (github.com/ota-programmer).**

  OTA Programmer for STM32 Micro-controller using NodeMCU Board to flash hex file on MCU using website wirelessly with the bootloader flashed in the STM32 Flash Memory (Illustrating Video).

- **Mobile Controlled Robot (github.com/ahmadmhasann/motion-detector-robot).**

  Mobile controlled robot that can be controlled using mobile application and it can avoid obstacles using Ultrasonic Sensor and NodeMCU based on (ATmega32). When the robot is not moving, a buzzer will beep when any movement is detected.

- **Digital Multimeter (github.com/ahmadmhasann/digital-multimeter).**

  Auto range Digital Multimeter based on (ATmega32) which has Ohmmeter measures from 5 Ohms to 3 Mega Ohms, DC Ammeter measures from 5 mA to 2 A, AC Ammeter measures from 5 mA to 50 A, DC Voltmeter measures from 5 mV to 55 V and AC Voltmeter measures from 5 V to 1000 V.

- **Morse Code Translator (github.com/ahmadmhasann/morse-code).**

  A translator based on (ATmega32, Touch Sensor) can receive the code from the user via the touch sensor. The device converts the entered code into text that is displayed on the screen. Conversely, the user can enter text using (4*3 Keypad), such as the old phone, and the device will translate it to Morse Code using LEDs and Buzzer.

- **Electric Water Heater (github.com/ahmadmhasann/electric-water-heater).**

  Electric water heater based on (PIC, and PICGenios Board).

- **Hardware Calculator (github.com/ahmadmhasann/hardware-calculator).**

  Hardware calculator based on (ATmega32).