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## **Faculty of Engineering, Ain-shams university, Cairo**

- Graduate-2023
- Major: Computer and Systems Engineering
- Grade: Very Good.

## **Graduation project (our [Demo link](#)):**

**Project title:** “self-driven car powered by digital twins” which is under the sponsorship of Siemens EDA (Siemens Digital Industries Software).

**Grade:** A+ (Excellent).

### **My role:**

As a member of the control team, team is responsible for using the classic AUTOSAR standard and trampoline OS to write our applications/tasks and generate the RTE files using the ARUNIT tool, we also had to work on the integration between the classic AUTOSAR and ROS2, using the UART gateway application.

## **Technical skills**

- Software testing principles, Testing Processes and Methodologies (White box, black box, and integration using junit).
- C++ object-oriented programming, Java object-oriented programming, Python, C programming.
- System Verilog, Verilog, VHDL.
- **Automotive operating systems:** AUTOSAR OS, trampoline OS, OSEK OS.
- **Database developing languages:** MongoDB, SQL.
- **Software Concepts:**  
Data structures and Algorithms, Software layering, Software Management life cycle, Software testing principles, Computer Architecture, Testing Processes and Methodologies.
- **Embedded Systems Concepts:**  
Microprocessor interfacing (AVR), Communication protocols (UART, SPI, CAN, I2C), Real-time operating systems (RTOS), Data structures & Algorithms, Embedded testing basics and techniques.
- **Tools:** Modelsim - Visual studio - Net beans (junit) – Keil – MySQL – Xcode – Eclipse – Proteus
- **Languages:** Arabic and English and French.

## **Courses**

- Testing academy for ISTQB Foundation Level -Valeo, 2023.
- Software testing course by ASU-2023.
- Complete Modern C++ (C++11/14/17) by Udemy created by Umar Lune-2023.
- STM32Fx Microcontroller Custom Bootloader Development by Udemy created by Kiran Nayak 2023
- AUTOSAR software design course based on ARM architecture -2023.
- Gearup academy for embedded systems -Valeo, 2023.
- Embedded system diploma -2022.

## **Projects**

- **Software Testing projects, ASU, 2022:**  
White box, black box, and integration testing to test functions of online school website code using junit is done.

- **NTI-Graduation project-2023:**

ADAS - FOTA (Firmware over the Air Updates to an Advanced Driver Assistance System).

- Used **Free-RTOS** in developing the famous snake game, **ASU-2023**.
- **Marketplace desktop application, ASU, 2022:**
  - designed a complete database of a marketplace desktop application.
  - Desktop application divided into server side using asynchronous sockets and thread pools (Java fx and Java), Data base using JDBC and MySQL and Client server using java socket programming.
- **Process Scheduling Project, ASU, 2022:**  
Visualization of Operating systems scheduling processes using Qt to develop GUI desktop application.
- **XML Editor, ASU, 2022:**  
In this project, there were many operations like parsing, consistency, formatting XML, compression and designing a GUI (Graphical User Interface) to visualize XML and Json files and drawing graph of it.
- **Embedded Systems Project, ASU, 2021:**  
Developed a GPS tracking system using TM4C123G Launchpad making use of Embedded C and GPIO and UART.
- **Machine learning model, ASU-2022:**  
to identify whether a person is going to recover from corona virus using some classifiers as:  
KNN, Logistic regression, naïve Bayes, decision trees and support vector machine.
- **self-driving car camera model, ASU-2022:** which detects the lane & can detect objects like (crossing cars, people) using YOLO-V3 technique for object detection trained using coco-dataset, gives **88%** accuracy on challenge videos.
- **Embedded projects using ATmega32:**
  - **Stop-Watch:** Developing a system that controls the stop-watch time displayed on 7-segm.
  - **Fan Speed Controller with Temperature:** Developing a system that controls the speed of a fan depending on the temperature.
  - **Distance Measuring System:** Developing a system that measures the distance displayed on LCD.
  - **Door Locker Security Systems:** Developing a system to unlock a door using a password.
  - **AUTOSAR project:** Implemented PORT AUTOSAR Driver for TI TM4C123GH6PM (Tiva-C) microcontroller according to AUTOSAR\_SWS\_PortDriver.

## **Trainings**

1-NTI-4 months program trainee, graduated on (3/1/2024).

2-AUTOSAR & Embedded Systems: A Deep Dive (Siemens summer courses 2023).

3-trained in NREA company for solar cells & systems.

4-trained at Exxonmobil for sales & marketing.

## **Activities**

- **2017-2020:** worked as an English teacher in nurse (Cozy Kindergarten) in summer for 3 years.
- **July 2021:** worked part time as a tele-sale in Medicare American company.
- **October 2021:** worked as airport supervisor in KidZania Cairo as a part time job.