Fady Romany Lahzy

Mechatronics Engineering Student

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E-mil | LinkedIn | GitHub | Portfolio

Profile

I'm Fady Romany, highly motivated Mechatronics Engineering student with hands-on experience in designing and optimizing embedded systems. Proven expertise in microcontroller programming, system-level integration, and model-based design using MATLAB/Simulink. Adept at developing scalable, reliable embedded applications with a focus on hardware-software integration, real-time systems, and performance optimization. Seeking a role to apply my skills in developing cutting-edge embedded system architectures that drive technological innovation and to create beneficial systems that contribute to the betterment of humanity.

Education

Bachelor of Mechatronics Engineering
Egyptian Academy for Engineering and Advanced Technology **(EAE&AT)**
October 2021 – Present | **GPA:** 3.6

High School Education
El Maaref El Hadetha Language School **(MAAREF)**
October 2018 – July 2021

Internships and Workshops

Summer Intern – Arab American Vehicles Co. (AAV)
July 2024

- Car repair training to provide post-sale service.
- Inspection and repair processes post-assembly.

Summer Intern – Arab Organization for Industrialization (AOI)
June 2024

- Analyzed and optimized assembly line workflows for Fahd armored vehicle systems.
- Welding methods for cutting armored steel.

Summer Intern – 99 & 909 Military Factories
June – July 2023

- Collaborate with engineers to operate a CNC machining operations.
- Maintenance operations for various factory equipment.

Workshop – Google Developer Student Club (GDSC)
January – February 2022

- Arduino Workshop to get familiar with Arduino programming, components, and basic interfacing techniques for beginner-level projects.

Technical Skills

- Technical Tools & Software
  - ❖ MATLAB/Simulink
  - ❖ Proteus 8 Professional PCB Design & NI CIRCUIT DESIGN SUITE (Multisim)
  - ❖ SolidWorks & AutoCAD
  - ❖ Alpha CAM
  - ❖ GeoGebra
  - ❖ Microsoft Office Suite (Word, Excel, PowerPoint)
- Communication Protocols
  - ❖ UART
  - ❖ SPI
  - ❖ I2C
- Integrated Development Environments (IDEs)
  - ❖ Eclipse IDE for C and C++
  - ❖ Visual Studio Code
  - ❖ Arduino IDE
  - ❖ Atmel Studio 7.0
  - ❖ EMU8086
- Programming Languages
  - ❖ C (Embedded C), C++
  - ❖ MATLAB Script/Code
  - ❖ Modelica
  - ❖ Python
  - ❖ Assembly Language for both AVR and x86

Projects

- Projects with Arduino Uno & MATLAB *(Using MATLAB/SIMULINK for simulation before real life implementation)*
  - ❖ Position Control System of a DC Motor.
  - ❖ Speed Control System of a DC Motor.
  - ❖ Analog implementation of a PID controller.
- Projects with ATmega32 MCU *(Using C Language (Embedded C), Eclipse IDE and Proteus for simulation before real life implementation)*
  - ❖ Driver Implementation for all AVR (ATmega32) Peripherals.
  - ❖ Smart Door Locker Security System.
  - ❖ Smart Home Automation.
  - ❖ Car Parking Sensor.
  - ❖ Digital Stopwatch with Dual Mode.
- Projects with ATmega328p_Arduino UNO *(Using AVR Assembly Language, Atmel Studio 7.0 and Proteus for simulation before real life implementation)*
  - ❖ Traffic light.

    - ❖ Digital Watch.
- Projects with ATmega328p_Arduino UNO *(Using Arduino IDE)*
    - ❖ PID Controller Application (Ball Balancing System).
    - ❖ Smart Parking Management System.
- Projects with Intel Microprocessor 8086 *(Using x86 Assembly Language, EMU 8086 and Proteus for simulation before real life implementation)*
    - ❖ BCD Counter from 0-999.
    - ❖ Digital Watch.
- Projects with Only Software Programming
    - ❖ Analysis and Animation for a 4 Bar Mechanism. *(MATLAB Code & GeoGebra)*
    - ❖ Student Management System Using Linked-Lists. *(C Language)*
    - ❖ Clinic Management System. *(C Language)*
    - ❖ Bank Management System. *(C Language)*
    - ❖ Smart Library Management System. *(C Language)*
    - ❖ GPA Calculator with Grade Mapping and Dynamic Input. *(C++ Language)*
    - ❖ Building Conway's Game of Life. *(Python Language)*

Courses and Certificates

- Standard Embedded System Diploma *_Edges For Training*
- Embedded Systems Essentials with Arm: Getting Started *_ARM ONLINE*
- Embedded System Engineer *_CourseVox*
- Model Base Development *_Udemy*
- State-flow Design *_Udemy*
- Creating Models and Generating Code with MATLAB/SIMULINK *_Udemy*
- MATLAB/Simulink Basics and Fundamentals *_Udemy*
- Machine Learning & Self-Driving Cars: Bootcamp with Python *_Udemy*
- Python Programmer Bootcamp *_365 Data Science*
- Python Programming *_MaharaTech – ITIMooca*
- HCIA-AI V3.5 Course *_HUAWEI TALENT ONLINE*
- ALX-AI Career Essential *_ alx – Africa*
- Web Development Advanced *_Udacity*
- Speak English Professionally *_Coursera*

Important Academic Courses

- Control Systems Engineering *_Norman S. Nise*
- Signals and Systems *_ALAN V. OPPENHEIM*
- Microelectronics Circuit Analysis and Design *_Donald A. Neamen*

Competitions

- MRC *(Minoan Robosports Competition Global Olympiad)* held at Future University in Egypt, competing in the Marathon ''Line Follower Robot'' category for Universities-Adults (18+).
    - ❖ Innovation Methodologies Used
        - Lyapunov-Based Nonlinear Control.
        - Error Clustering with Sensor Arrays.

        - Kinematic Analysis with Real-time computation.
        - Scalable Modular Design.
    - Technical Highlights of Our Approach
        - Model-Based Design Using MATLAB Simulink.
        - Nonlinear System Control.
        - Advanced Sensor Integration.
        - Custom Speed Calculation Algorithms.

Student Activities

- Member at GDSC – Community of EAE&AT
    - Online Workshops about Arduino.
    - Online Workshops about Leader Management.
- Member at Enactus Project Management Team

Soft Skills

- Communication Skills.
- Team Work.
- Time Management.
- Public Speaking.
- Leadership.
- Work Under Pressure.

Languages

- Arabic _*Native*
- English _*Proficient*
- French & German _*Basic*

Interests

- Car Races.
- Reading.
- Swimming.
- GYM Sports.