Basel Shrief Hemaid Moustafa

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EDUCATION

Faculty of Engineering, Cairo University – Cairo, Egypt ***Sep 2023 – Expected July 2028***

B.Sc. in Electronics and Communication Engineering.

Specialized in designing IC's and Software for Embedded Systems according to the global standards.

Work Experiences

- Elected Class Representative for First-Year Communications Engineering students, serving as the link between students and faculty. ***Aug 2024 – Aug 2025***
- Communication and Networks Training with PetroJet in Project new Cairo Metro line 4 ***July 2025 – Aug 2025***
- RTOS Embedded EcoRacing Team member ***Aug 2025***

ACHIEVEMENTS

- **TCCD Research Day Challenge —** *First Place* ***May 2025***
- **Line Follower Car Competition, Cairo University Eco Racing team**— *First Place* ***Feb 2025***
- **NASA Space Apps Challenge, Port Said Branch** — *First Place & Global Nominee* ***Oct 2024***

Courses

- **Sprints Microsoft:** AI and Machine Learning ***July 2025***
- **ITI-Mahra-Tech:** Embedded C Hardware Essentials and Device Driver Development ***July 2025***
- **Sprints Microsoft:** Cybersecurity Summer Camp ***July 2025***
- **IEEE:** introduction to Digital Design Sessions Using Verilog on Questasim ***June 2025***
- **CS50:** Web Programming with Python and JavaScript ***Dec 2022***

Technical Projects

- **Desinging Communication Protocol (I2C , UART) – NTI Verilog Summer Training Project** ***Aug 2025***
  - Designed and simulated 2 examples of Communication Protocols like I2C , UART and learning the Concepts of these protocols Modules Design and properties
- **8-Bit Processor Designer – NTI VHDL Summer Training Project** ***Aug 2025***
  - Designed and simulated a 8-bit single-cycle simple processor in VHDL, implementing a full datapath, control unit, memory modules, and instruction execution flow using ModelSim and Vivado.
- **RISC-V Processor Designer – IEEE Digital Design Sessions** ***July 2025***
  - Designed and simulated a 32-bit single-cycle RISC-V processor in Verilog, implementing a full datapath, control unit, memory modules, and instruction execution flow using ModelSim and Vivado.
- **Sunlight Simulation and Illumination Analysis on 3D Human Model using MATLAB** ***May 2025***
  - Simulated sun movement over a 3D STL model of a colleague in MATLAB, analyzing surface lighting and shadow effects. Learned 3D design integration, and dynamic visualization, and importing my MATH Models in that simulation.
- **Logic Gates using Transistors and Diodes** ***Apr 2025***
  - Designing Transistors and MOSFETS and Diodes circuits to make simple Logic Gates and implementing them into a real circuit like: 2Bit-Binary Adder/Subtractor.
- **Automated Lane Follower Car** ***Feb 2025***
  - Designed and developed an autonomous car by the STM32 "Blue Pill" microcontroller, programmed using STM32CubeIDE.
- **Designing Multimeter** ***Dec 2024***
  - Developed and Designed a Circuit using Arduino and Op Amps for amplifying and reading All the main circuit Components (Voltage and Current and Ohmic Resistance) in a small Designed PCB
- **Exoplanet Simulation Website** ***Oct 2024***
  - Collaborated to design a website simulating exoplanets using HTML, CSS, JS, and React, completing it in 48 hours for the NASA Space Apps Challenge.

SKILLS

- **Programming:** C++, C, JavaScript, HTML5, CSS, Python, HDL, Verilog and MATLAB.
- **Personal Skills:** Leadership, Communication, Time Management, Conflict Resolution.
- **Software Skills:** Canva, PowerPoint, Excell, Microsoft Word, Altium, Multisim, ModelSim, Vivado.
- **Hardware Skills:** Arduino, STM32, Circuit Analysis.
- **Languages:** Fluent in English and Arabic.
- **Hobbies:** Video Editing, Photoshop.