Mohamed Ahmed Galal Mohamed

Cairo, Egypt | (+20) 102-254-6004 | mohamed@mgalal.dev | linkedin.com/in/mohamed--galal
mgalal.dev | github.com/MohamedGalal-2

I'm an engineering student and specializing in embedded systems with practical experience in AVR and ARM Cortex-M microcontrollers. Skilled in developing RTOS-based drivers, and embedded communication protocols including UART, SPI, I2C, CAN, and LIN. Currently exploring AUTOSAR architecture and Embedded Linux to build scalable, low-level applications. Looking to join a technically driven team where I can grow as an embedded developer and contribute to impactful real-world systems—especially in automotive and IoT domains.

Bachelor's in Electronics and Communications Engineering
Faculty of Engineering, Beni Suef University | GPA: 3.154

AI-Controlled Smart Car with Embedded Systems & OTA | GitHub (Team Project)

- Built a smart vehicle system using STM32F401RCT6, ESP32, and Arduino to enable AI-based traffic sign recognition and mobile app control via MQTT.
- Integrated real-time decision-making using PC-based AI models, Bluetooth communication, and obstacle detection; system also supports Firmware Over-The-Air (FOTA) updates

POSIX Shell for Windows | GitHub

- Developed a Windows shell that mimics POSIX system calls using C programming and replicates core Unix shell functionalities.
- Implemented command parsing, piping, background execution, and environment variable management to simulate a terminal interface.

Merklerex Trading Simulator | GitHub

- Created a desktop simulator that emulates cryptocurrency market trading for risk-free strategy testing using synthetic order book generation.
- Designed core trading engine logic, command interface, and price fluctuation emulation to mimic real-time market conditions.

Hack Assembler | GitHub

- Built an assembler for the Hack computer architecture that converts symbolic instructions into binary machine code. Reinforced low-level programming skills and deepened understanding of the hardware-software interface in CPU design.

Industry Knowledge

- Embedded Systems
- RTOS & Communication Protocols: CAN, LIN
- Familiar with AVR & ARM Architecture
- Programming: C, C++, Java, Python, Bash

Tools and Technologies

- STM32CubeIDE, STM32CubeMX
- Keil uVision, visual studio code
- MPLAB IDE, Atmel Studio
- Android Studio, IntelliJ IDEA

1st Place – Schneider Electric Battery Innovation Challenge (Egypt Edition) Jul 2025
Organized by Schneider Electric, Enactus Egypt, and Enactus Fayoum University

---

Embedded Systems Diploma – Supervised by Eng. Ahmed Abdelghafar (Ongoing)

- Applied AUTOSAR architecture, CAN/LIN protocols, and bootloader development using SWD debugging tools.
- Developed drivers for ARM Cortex-M4 (RCC, SysTick, UART, SPI, I2C); implemented RTOS.

Full Embedded Systems Diploma – Supervised by Eng. Mohamed Zaghloul

- Developed drivers for AVR (DIO, Timers, UART, SPI, I2C); implemented RTOS and bootloader.
- Learned driver-layer separation and embedded systems design flow.

Software Testing Course – DEPI

- SDLC, STLC, test case design, TDD, and automated testing using Selenium and Postman.

OOP Specialization – University of London (Coursera)

- C++ and modular design applied to a cryptocurrency system capstone.

Nand2Tetris – Coursera

- Designed a complete computer architecture and built compiler, VM, and OS components from scratch.

Central IT Dept. Head – Life Makers Universities Club

- Managed IT systems for 6000 volunteers across 36 universities
- Built databases, search engines, and created 40+ tutorial videos

IT Dept. Head – Life Makers Beni Suef University Club

Trainer – Youth Fostering for Community Leaders

Participant – Youth Voice Training by British Council

- English: Proficient in reading, writing, and communication
- Arabic: Native