

## Work Experience

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- **APTIV (EJAD BOT program)** Free Zone, Naser City  
*Embedded Systems Software Engineer* Oct 2022 - Present
  - **MPIC (Multi-Purpose Interior Camera)**  
*part of Daimler's CIVIC "central In-vehicle infotainment computer" project:*
    - \* Developed a C++ Camera Manager application running in RichOS to communicate with and test the MPIC Camera Driver running in QNX through the hypervisor layer.
    - \* Tested the software at the level of SWE.5 "Integration" & SWE.6 "Qualification" testing following the ASPICE model.
    - \* Collaborated in implementing HIL for qualification testing between the Imager and the MPIC.
- **Cairo University, Faculty of Engineering** *(experience letter)* Giza, Egypt  
*Teaching assistant* Oct 2021 - Jun 2022
  - **Programming Techniques course:**
    - \* Co-instructed C++ basics and function versus object-oriented programming.
    - \* Evaluated students' assignments and quizzes.
  - **Data Structures & Algorithms course:**
    - \* Co-instructed data structures representations in storage media and memory allocation.
    - \* Co-instructed searching and sorting algorithms.
  - **Advanced Programming Techniques course:**
    - \* Co-instructed Programming Techniques in Network and various Media Types (e.g., multithreaded programming, Internet programming).
- **Advansys ESC** Free Zone, Naser City  
*RPA developer intern* Sep 2020 - Mar 2021
  - **Bupa:** Supported in the maintenance of deployed robots using UiPath, Blue Prism, and Automation Anywhere frameworks.

## Education

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- **Cairo University, Faculty of Engineering** *(certificate)* Giza, Egypt  
*Bachelor of Engineering in Communications and Computer; GPA: 3.31* Sep 2015 - May 2020
- **Bonn-Rhein-Sieg University of Applied Sciences** Bonn, Germany  
*Master of Science in Autonomous Systems; In Progress* Apr 2024 - In Progress

## Academic Projects

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- **Lipify - Lip Reading Application, Graduation Project:**
  - Developed a system that can use only lip movements to predict the user's words based on selected categories and using only lip movements.
  - Built a lips recognition module using image processing in Python.
  - Implemented a feature extraction module using DCT and LDA.
- **Arabic Optical Character Recognizer, Pattern Recognition Course:**
  - Built an offline OCR system using TensorFlow, depending only on classical approaches to extract features.
- **FIFA Analyzer, Big Data Course:**
  - Provided meaningful insights and analysis of clubs, age distribution among top valued clubs, and superstars' skills.
  - Built a linear Regression Model using R to predict a player's market value.
  - Built Polynomial and Linear Regression Models using R to predict players' wages.
- **Scrabble Engine, Machine Intelligence Course:**
  - Developed an intelligent agent that plays the Scrabble board game.
  - Integrated and tested the Monte-Carlo Module in the system.
- **EmojiCode, Compilers Course:**
  - Implemented a lexer, parser, and compiler for a language of emojis using Lex and YACC.

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## Additional Experience and Awards

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- **AUTOSAR MasterClass** (*certificate*)

Sprints.ai

*Jul 2023 - Sep 2023*

- Learned the layered architecture of AUTOSAR and BSW stacks with a deep dive into COMM, Diagnostics, System & OS, Memory, and Wdg stacks.
- Learned about SWC: design, data types, sender/receiver, client/server, and mode/switch interfaces.
- Developed and configured SWC using Sprints Autosar Authoring Tool (SAAT) as a part of the final project “Seat Manager Application”.

- **CURT Cairo University Racing Team**

Cairo University

*Sep 2019 - Jun 2020*

- Developed a vehicle data logging system with a real-time dashboard alongside a robust failure detection system to enhance safety and performance.
- Developed a communication system between the Raspberry Pi and the main ECU (Hercules RM48) for data exchange using CAN protocol.

- **Embedded Systems Diploma**

Eng. Mohamed Tarek

*Jun 2019 - Aug 2019*

- Studied Embedded C, AVR Micro-controllers Interfacing, and RTOS.
- Built a door-locking security system using ATmega32.
  - \* Implemented a Security System consisting of two ECUs, HMI and control ECU, responsible for interfacing with the user and system operations & control.

- **B1 German** (*certificate*)

Goethe Ins.

*2020*

- **C1 IELTS** (*certificate*)

IDP Education

*2023*

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## Skills

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- Python | R | C++ | C | C# | Java | Javascript | PHP | HTML | CSS | JQuery | SQL | VHDL | UNIX | OOP
- AUTOSAR | Git | Polarion | Jira | TensorFlow | CI/CD