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Mostafa Abdelgawad

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Education

- **Cairo University, Faculty of Engineering** — Giza, Egypt
  Bachelor of Engineering in Communications and Computer; GPA: 3.31 — *Sep. 2015 – May. 2020*

Work Experience

- **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:
    * Implemented a Camera Manager running in RichOS to test the MPIC in QNX through 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** — 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.

Academic Projects

- **Lipify - Lip Reading Application, Graduation Project**:
  - Developed a system that can predict the user's words based on selected categories and using only lips 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.

Additional Experience and Awards

- **AUTOSAR MasterClass** — 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, which is responsible for interfacing with the user and control ECU, which is responsible for the system operations and control.

- **B1 German Certificate** — Goethe Ins.

- **C1 IELTS Certificate** — IDP Education

Programming Skills

- **Languages**: Python, R, C++, C, C#, Java, Javascript, PHP, HTML, CSS, JQuery, SQL, VHDL
- **Technologies**: AUTOSAR, GERRIT, GIT, Polarion, JIRA, TensorFlow