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EDUCATION

B.Sc. Computer Engineering, The American University in Cairo (AUC), Egypt, Spring 2021. Major GPA: 3.04/4.0

Thanwya 'Amma, Modern Narmer Language School, Fall 2015.

WORK EXPERIENCE

- **IBM,** Data Integration - Data Engineering Internship program, December 2021 - February 2022
  - Learned SQL, ETL tools (DataStage), Power Bi (IBM Cognos/Tableau), Data Analysis - Business Analysis, Big Data, Data Modeling Concepts, Cloud Overview, Data Management, Data Governance, Data Science, Java and Python through courses taught during the first two weeks of the internship.
  - Experimented with IBM DataStage Info-sphere through mini tasks, as well as applying knowledge gained to solve simple tasks in a real-life project associated with the ACA.
- **Agile Technologies,** Web and Mobile development Intern, July 2020 - August 2020
  - Educated the Software development lifecycle (SDLC) - Agile Methodology
  - Designed and implemented an offline eCommerce website (Full Stack development) using OutSystem's platform as proof of concept. The full product was a complete backend equipped with a relational database, and an appealing GUI.

ACADEMIC PROJECTS

- **Graduation project:** Developed a closed loop healthcare system where it mainly focuses on the well-being of the elderly through two main features; The system depends on a smartwatch to be worn by the patient/user (Fitbit Sense). **Indoor Localization** using multiple ESP32 acting as BLE devices that detects the presence of a user in a specific room and depending on the RSSI of each BLE device the location of the user will be sent to the backend database (**firebase**). Secondly, **Fall detection algorithm** using Machine Learning (Our team created our own dataset) with accuracy of 85% and 10% false positive results. In order to train this model we used a blend of an online dataset along with creating our own dataset directly from the smartwatch to enhance the model's accuracy. Finally, **an IOS & Android application** to keep the caregivers in sync with their elderly's health daily (to check their current location at their home, or receive an emergency when a fall is detected), and to allow caregivers and doctors to send reports to the patients profile. The caregivers can know the user's heart rate, skin

temperature, step count and calories burnt and sleeping patterns all through our E-Care application.

- Developed a Verilog program on a BASYS board (FPGA) to mimmic a traffic light systems (Using clocks, counters and LEDs)
- Developed a shooter game for an intro to CS (CS110) using C++ and SFML.
- Development of airport time scheduler with arrival and departures of airplanes to add a new plane and schedule it in Analysis and Design of Algorithms course.
- Developed RISC V processor using Verilog in collaboration with other members in Computer Architecture course and simulation of Data Memory and Instruction memory.
- Simple programs in assembly language course using MIPS. Intel x86 to develop a boot loader given a skeleton.
- Designed a processor simulation using C++ in Object Oriented Development course.
- Developed an Online Property Selling and Renting website using PHP, HTML, CSS and MySQL database in Fundamentals of Database Systems course
- Developed a game in Unity and C# as the programming language with a team of graphic designers in Game Development course.
- Developed a real time application to display the ECG signal using the AD8232 (ADC) and STM32 as the microcontroller in **Embedded Systems** course
- Developed a simulation of a Distributed System by allowing a process to fork a child on a remote machine, made use of TCP to establish connections between two virtual box, where every machine can act as either client or server, and finally the child function executes on the second machine. The TCP communicated is established using CRIU. All taught in a distributed systems course.
- Tested a few SQL injections for a weak security website. Making use of a weakness in a C program where it uses strcpy to overflow the buffer, as well as overwriting the return address to navigate to the shell code that gives the attacker a root privilege of the machine.

ONLINE COURSES AND CERTIFICATIONS

- **IBM Data Science,** currently enrolled in IBM Data science course to kick start my career in the data science field.
- **IBM DevOps and Software Engineering**, currently enrolled in this course to develop my software engineering concepts and apply it through work.

EXTRA-CURRICULAR ACTIVITIES

Member, CSEA, Computer Science and Engineering Association, AUC, Fall 2019– Spring 2020

- Collaborating and organizing with members to deliver events and competitions for computer science and engineering students.
- Arrange and contact people with experience in the field to motivate fellow students.

Member, Events and Entertainment, AUC Student Union (Sept 2018-Jun 19)

- Managed the flow of the audience in AUC theatre.
- Hosted a FIFA20 tournament with prizes.

SKILLS

- **Languages:** Native Arabic, fluent in spoken and written English, Good in spoken French
- Proficient user of Microsoft Office applications: Word, Powerpoint, Excel.
- **Programming Languages:** C++, Java, C#, C, Python, Go, Verilog HDL, MIPS & RISCV assembly, JavaScript, HTML5, CSS3, PHP.
- **Skills:** Data Science, Deep learning, machine learning, big data, data mining, Github, Jupiter notebooks, RStudio, pandas, data analysis, Scikit-learn, Tensorflow (know the basics), Java REST API
- **Good knowledge** in SQL, MongoDB database systems.