Ayman Elakwah

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EDUCATION

- Faculty of Engineering, Cairo University
  B. S. in **Computer Engineering** (Graduation year: 2021)
  Cumulative score: 89% (**Excellent with honors**)

COURSEWORK

- Udacity **Android Developer Nanodegree** Course
- Udacity **Deep Learning Nanodegree** Course
- Software Engineering
- Programming Techniques & OOP
- Data Structure & Algorithms
- Pattern Recognition
- Image Processing
- Computer Architecture
- Microprocessor Systems (Assembly Language)
- Computer Graphics
- Database Systems
- Circuits & Electronics, VLSI
- Numerical Analysis, Linear algebra, Calculus 1 & 2

SKILLS

- Programming languages: C++, Java, Android Java, Python, Assembly.
- Familiar with: JavaScript, PHP.
- Good communication skills.
- Have the ability to work under pressure.

EXPERIENCE

- Led a team of 18 having sub-teams (Front-end, Back-end, Android, Testing, DevOps) to develop an application that mimics Twitter.
- Familiar with Linux OS (Ubuntu, Fedora)
- Familiar with basic security vulnerabilities (e.g., Cross Site Scripting, SQL Injection)
- Attended Dell VMware Students Workshop (40 hours)

PROJECTS

- **Elegant Teleprompter (Android App):** It helps people who want to speak fluently in front of cameras. It presents the user with a scrolling text that can be created from mobile or imported from the drive. It has 1,000,000+ downloads.
  (Google Play: Free version – Pro version)
- **Map Routing:** a java application that finds the shortest path between any two arbitrary locations on the map using A* algorithm, taking into consideration road directions based on data provided by OpenStreetMap project. This was my role in the graduation project (Autonomous Taxi), in addition to the Android interface to request and track the taxi. (GitHub)
- **Search Engine (Android App):** Search engine interface for text and images. It is built using MVVM architecture. I've also developed the Tomcat endpoints that converted the java backend into a REST API. (GitHub)
- **Circuit Analyzer (C++):** Application that solves RLC circuits. It takes a netlist file as an input and then calculates the current in each branch and potential difference between nodes. (GitHub)
- **Simple Compiler:** A simple compiler built using Lex and Yacc (GitHub)
- **Popular Movies (Android App):** Connects to TMDb REST API. It lists movies, their rates, reviews and trailers. (GitHub)
- **Baking (Android App):** Gets recipes through an API, displays them in fragments (Compatible with tablets), plays videos, has a widget.
- **Automated Laser Turret (Android & Arduino):** Android application that detects object position and send it serially to Arduino that controls servo motors having 2 degrees of freedom to shoot laser on the object in 3D space. (YouTube)
- **Fall Ball (Android Game):** Tilt your device to control a ball trying to fall through obstacles. The game is developed using Libgdx framework. (Google Play)
- **Tanks Game (Assembly):** Multiplayer game written in assembly language and uses serial connection between two computers. (Team project)
- **Photofia (Database project):** Contributed in developing the backend of this web application using PHP Laravel framework.
- **Hill Cipher Image Encryption:** Mathematical research project that discusses how to overcome the disadvantages of the original Hill cipher algorithm. We implemented our algorithm using python and compared the results. (Team project)

AWARDS

- Won the **2nd place** in the 3rd Undergraduate research forum in Cairo University as a team for our research "Hill Cipher Image Encryption". (2018)
- Got listed in Magix Hall of Fame for discovering XSS vulnerability **(**Jul 2014**)** http://research.magix.com/