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Islam Wagih Emam

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I am an enthusiastic computer science student interested in performance optimization and problem-solving using data structures and algorithms.

Education

Third Year Computer Science student   Cairo University   Sep 2019 – June 2023
GPA: 3.49/4.00.

Selected Projects (for full list please visit GitHub)

- **Chinese Checker Human vs AI**: checker game, human vs AI agent with a complete GUI and AI algorithm to play against, the AI algorithm is unbeatable it cannot lose in any difficulty mode easy – medium – hard it's designed to win or draw in the worst case, which is the human played all his moves optimally using java – java swing GUI library.
- **User Driver API:** a web API helps users communicate with car drivers to transport users to any area and negotiate about the salary of the ride using java, sprint boot, postman and sqlite3.
- **2D Graphics Library:** developed a complete 2d graphics library from scratch to do simple shapes, curves, filling, splines and around 20 more option to draw almost anything using only mathematical concepts without any external library using C++ and windows API.
- **Virtual File System:** virtual file system that give the user the freedom to create, delete and update files and folder with Contiguous, indexed, or linked allocation mechanism, and a protection layer to grant or prevent specific users the access to any file or folder in the system using Java.
- **High Performance Histogram:** high performance histogram to show data frequency of a dataset using concurrent and parallel programming with C++, MPI and openMP.
- **An Image Compressor Algorithm:** an images compression algorithm is developed to reduce images' size with compression ratio up to 4:1 from the original size through building a vector quantizer from scratch using java.
- **Router Simulator:** a multithreading application that simulates connection between a router and several devices using java.

Awards and Self-Study

- **13th – place**: out of 100 teams at EPCP Qualifications in **2021**, for more info visit ICPCID.
- Solved **1000+ problems** on various online judges on algorithms and data structures.

Extracurricular and Volunteer Work

- **Java Instructor:** I am an instructor and coach for SCCI, a student activity branch at Cairo University.
- Contributed to Problem Solving Training of FCAI ICPC Community for newcomers.

Programming Languages and Technologies

- Java, C++, Python.
- Algorithms, Data Structures
- Relational Database using MySQL, SQL server, Version Control with Git, GitHub and Bitbucket
- Basic Knowledge of (HTML, CSS, JavaScript)