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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**  
**GPA: 3.49/4.00.**

**Sep 2019 – June 2023**

## Work Experience

### **C++ Software Engineer Intern - Siemens EDA**

June 2022 – August 2022 / Cairo, EG

- Built, tested, and benchmarked advanced free lock, wait free and non-blocking data structures to achieve maximum performance on multithreading systems.
- Built a multithreaded benchmark system that can deduce the best guard and buffer type to use to achieve maximum performance with a specific machine architecture.
- Built a thread safe buffer library that can switch any serial buffer to a thread safe one.

## 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.

## Awards

- **13<sup>th</sup> – place:** out of 100 teams at EPCP Qualifications in **2021**, for more info visit [ICPCID](#).

## Extracurricular and Volunteer Work

- **Java Instructor:** I am an instructor and coach for SCCI, a student activity branch at Cairo University.

## Programming Languages and Technologies

- Java, C++, Python
- MySQL, SQL Server, Git, GitHub and Bitbucket
- Basic Knowledge of web development using HTML, CSS, JavaScript
- Basic Knowledge of backend frameworks using Django and Spring boot