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Islam Wagih Emam

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Education

Senior Computer Science Student   **Cairo University**   **Sep 2019 – June 2023**
GPA: 3.37/4.00.

Work Experience

C++ Software Engineer Intern - **Siemens EDA**
June 2022 – November 2022/Cairo, EG

- Built, tested, and benchmarked advanced free lock, wait free and non-blocking data structures to achieve maximum performance to producer-consumer applications.
- Built a multithreaded benchmark system that can deduce and report statistics about the best locking mechanism to achieve maximum performance on the running machine architecture.
- Built a thread safe tool able to switch any serial data structure to a thread safe one.
- Built some special data structures to be used in some applications.

C++ Software Engineer Trainee - **Siemens EDA**
Feb 2023 – April 2023/Cairo, EG

- Participated in the Software Engineering Diploma offered by Siemens Software Academy.
- Topics Covered: OOP design, SOLID principles, Design patterns, Debugging, Clean coding, Data structures & algorithms, Problem solving, Linux, Version Control, Build systems, Database Design, Parser & Compiler Development, Qt C++, AVX Intrinsic and CUDA for GPU Programming.

Selected Projects (for full list please visit GitHub)

- **E-Jam Graduation Project (Supervised by Siemens EDA):** Software tool helps normal users and software engineers to test, debug and monitor switches using C++, Java, Rust, Flutter.
- **Compiler for Tiny Language:** a fully functional compiler composed of three phases: lexical analysis, parsing, and code generation, for a language called tiny, which only supports integer data types and integer operations using C++.
- **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.

Extracurricular and Volunteer Work

- 5th **place**: out of 220 teams at EPCP Qualifications in 2022.
- **Java Instructor** (student activity): helped university students to learn basics of Java in 2022.

Programming Languages and Technologies

- **C++, Java, Python, Data Structures and Algorithms.**
- **Good knowledge of Parallel Programming and Multithreading.**
- **Good knowledge of Design Patterns.**
- **Good knowledge of Relational and Non-Relational Databases.**
- **Basic knowledge of (QT C++, AVX Intrinsic, CUDA).**
- **Basic knowledge of web applications (HTML, CSS, JavaScript, Django, Spring Boot).**