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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

DevOps Engineer (Long Term Intern) – Siemens EDA
   May 2023 – Present/Cairo, EG
- supporting the USA Business Intelligence team in their migration from outdated tools to the latest ones.

C++ Software Engineer (Long Term 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 for future parallel and multithreaded 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 general serial buffers to thread-safe ones.
- Built some special data structures from scratch to be used in low-storage devices.

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, System Design, Parser & Compiler Development, Qt C++, AVX Intrinsics and CUDA for GPU Programming using C++.

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, and 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 learn Java basics 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.**