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Islam Wagih Emam

Education

Bachelor of Computer Science and Artificial Intelligence at Cairo University Sep 2019 – June 2023
GPA: 3.38/4.00.

Work Experience

DevOps Engineer – Siemens DISW
  Aug 2023 – Present/Cairo, EG
- Participating in the infrastructure and development of Simcenter Amesim.
- Participating in the debugging process and development of GTF (generic testing framework).
- Packaged a lot of open-source libraries to be used directly in production.
- Participating in the development of the TPLOS project (third-party libraries orchestrator).

DevOps Engineer (Long Term Intern) – Siemens DISW
  May 2023 – August 2023/Cairo, EG
- Supported the USA Business Intelligence team in their migration from outdated tools to the latest ones.
- Implemented various batch scripts to do checks for requirements of several projects.
- Maintained the Python infrastructure at the Shannon servers.

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 and compare with the locking-based parallel and multithreaded data structures.
- Built a **multithreaded benchmark** library 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-latency and 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 and algorithms, problem-solving, Linux, version control, build systems, database design, system design, parser, and compiler Development, Qt C++, AVX, and CUDA for GPU programming.

Selected Projects (for a full list please visit GitHub)

- **E-Jam Graduation Project (Supervised by the Ethernet Team at Siemens EDA):** a software tool that helps users test, debug, and monitor switches using C++, Java, Rust, Kafka, Docker, and Flutter.
- **Compiler for Tiny Language:** 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:** web API helps users communicate with car drivers to transport users to any area and negotiate about the salary of the ride using Java, Spring 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 options to draw almost anything using only mathematical concepts without any external library using C++ and Windows API.
- **Virtual File System**: virtual file system that gives the user the freedom to create, delete, and update files and folders with a Contiguous, indexed, or linked allocation mechanism, and a protection layer to grant or prevent specific users access to any file or folder in the system using Java.
- **Class Generator**: a software tool that takes parameters as text fields allows nesting structures and generates C++ code to be able to use it directly.

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,**
- **Solid Knowledge of Data Structures and Algorithms.**
- **Good knowledge of Concurrent and Parallel Programming.**
- **Good knowledge of Design Patterns.**
- **Good knowledge of Linux & Unix systems.**
- **Good knowledge of Relational and Non-Relational Databases.**
- **Good knowledge of shell and batch scripting.**
- **Basic knowledge of Docker, Jenkins, and CI/CD.**
- **Basic Knowledge of GPU programming.**