Giza, Egypt
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OMAR H. SALEM

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EXPERIENCE

Software Engineering Intern **Siemens EDA** **Feb 2022 - Present**

Member of QuestaSim Team:

- Implemented different approaches to deal with loading the UCDB files.
- Benchmarked these different approaches and documented it.

C++ Software Engineering Intern **360Imaging** **Jul 2021 – Oct 2021**

Member of the Rendering and Computational Geometry Team:

- Dealt with Asset Management (Shaders, Fonts) in the engine.
- Helped refactor the rendering engine by implementing different renderers, some of them with batching.
- Visualized and used CG data structures (BVH trees, Octrees) for the rendering engine examples.

C++ Software Engineering Intern **ASI - Misr** **Aug 2020 – Sep 2020**

Worked on Extreme Loading for Structures (ELS):

- Implemented Jacobi and Conjugate Gradient methods for equation solving using CUDA.
- Increased the speed for the equation solving module to be two/three times faster.
- Integrated the new implementation to the software using DLLs.

EDUCATION

Giza, Egypt **Cairo University** **Sep 2017 – Jun 2022**

- B.S.E. in Computer and Communications Engineering, expected June 2022. GPA: 3.99
- Coursework: Data Structures, Algorithms Design & Analysis, Object Oriented Programming, Microprocessor & x86 assembly, Computer Architecture, Operating Systems, Compilers, Computer Graphics, Image Processing, Pattern Recognition & Neural Networks, Machine Intelligence, Linear Algebra, Differential Equations, Numerical Analysis

PROGRAMMING LANGUAGES, SKILLS & TECHNOLOGIES

Programming Languages

- **Familiar:** C, C++, x86 assembly, Python
- **Prior Experience:** C#, JavaScript, MATLAB, VHDL

Skills & Technologies:

- **Familiar:** OpenGL, CUDA, Unity, OOP, Problem Solving, Git, Linux
- **Prior Experience:** NodeJS, ExpressJS, MongoDB, MySQL, SQLite

Languages: Arabic (Native), English (Proficient)

PROJECTS

- **OHEngine:**
  A simple Entity Component System Engine implemented in C++ and using OpenGL. The engine currently supports Shadow Mapping, Post Processing, Skyboxes, Blending, Ray Picking and variable number of Light Sources. The game reads the scene from a simple text file.
- **Music Sheet Reader:**
  OMR Application developed using Python to convert scanned music sheets to text files.
  - Handled the Segmentation and Classification part.
- **Pocket Tanks x86:**
  Implemented a clone for Pocket Tanks game using x86 assembly. The game supports multiplayer using Serial Communication.
- **Simple DBMS:** A simple DBMS implemented in C using our own semaphores based on Linux message queues to prevent racing conditions.
- **Simple 5-stage pipelined processor:** Implemented a simple processor in VHDL.

INTERESTS

- Game Programming, Game Jams, Computer Graphics and AI.