

# Omar Belih

## Software Engineer



Birthdate: 13 October 1998



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## About me

Software Engineer that is passionate about science and technology especially Computer Graphics, Game Development & Robotics.

## Skills

Languages:

C/C++, Java, JavaScript

Game/Graphics Programming:

Modern OpenGL[3.3+], SDL2.0, CEGUI, ImGui, GLSL, Unity, Unreal Engine

Web Development:

NodeJS, ThreeJS

Others:

Git, Unix Bash, Slack, JavaFX, SQL, MongoDB, Arduino, Matlab

## Education

2016-2021 Faculty of Engineering

Alexandria University

Computer & Communications Department. GPA 3.22

## Awards

2018 5th Place in UGVC2018 with MindCloud.

2018 4th Place in Minesweeper2018 with MindCloud.

## Experience

2017-2019 Software Engineer at MindCloud

Technical Team

University Robotics Team.

## Projects

Ongoing

[Game-X Engine](#)

C++ SDL OpenGL ImGui

GameX Engine is a 2D/3D Game Engine[Work In Progress].

-Windowing using SDL.

-Graphics Renderer working OpenGL.

-Logging using spdlog & GUI System using ImGui.

-Event System. -Model importing using Assimp.

Jun-2020

[XINU OS](#)

C

Operating System Implementation of XINU 2020.

Project 1: processes queue table

Project 2: process scheduling

Project 3: reader/writer locks and priority inheritance.

Project 4: updates to the TTY device driver.

Project 5: Message Passing.

Project 6: hierarchical file system driver and pipe Devices.

May-2020

[Compiler Generator](#)

Java JavaFX

First three phases of the front-end compiler.

It takes the rules for each phase and produce the output for the next phase.

Jul-2019

[Minesweeper Grid Visualization](#)

Web Development [NodeJS ThreeJS]

NodeJS application to Visualize how the mines are put into the grid in Minesweeper robotics competition in Real-Time.

May-2019

[SIC/XE Assembler](#)

Java JavaFX

Two Pass Assembler that translate SIC/XE to obj code.

Mar-2019

[Lort Renderer](#)

C++ SDL

Optimized Software Renderer that written in an way to get high FPS.

-Fixed Point arithmetic.

-Perspective correct texture mapping.

-Lighting and Shadows

-OBJ Models Support.

-SIMD Maths.

Oct-2018

[GameX Level Editor](#)

C++ OpenGL SDL CEGUI

User-Friendly Level Editor that helps to create 3D Environments.

-Stable For OBJ models [Supports other formats]

-config. file that enables flexibility for the user.

-General GLSL inputs that can be used for any user made GLSL files.

-Navigation mesh That helps to find walk-able areas of the map.

-Relatively good graphics with Light Support along with Normal mapping, Reflective water surface and Shadows.

May-2018

[Maze Runner](#)

Java JavaFX

Game that challenges the player to finish a maze.

-Flipbook animations on JavaFX Canvas.

-Different Design Patterns were used.

-Particle effects, Camera and other challenging game objects.