

# Yousif A. Aldolaijan

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## Experiences

### Software Engineer - Mozn

January 2021 - Present

- Designed, developed, and supported features for an Anti-Money Laundering (AML) and Know Your Customer (KYC) SaaS called [Focal](#).
- Scaled and optimized feature implementations to support millions of screens/transactions per user.
- Provisioned and instrumented infrastructure required to manage and maintain Focal on multiple cloud providers.

### oxDNA Acceleration using Multi-GPU - Nanovisualization Lab at KAUST

August 2020 - December 2020

- Accelerated oxDNA molecular dynamics simulations by 20% using multiple GPUs and NVLink.
- Programmed using C++ and CUDA under the guidance of Dr. Ivan Viola.

### Molecular Dome (Moldome) - Nanographics Internship

Summer 2020

- Finalized the implementation of a molecular visualization framework to be used in projection domes using C++ and the SGCT library under the guidance of Dr. Peter Mindek and Dr. Ivan Viola.
- Implemented user-parameterized camera controls and animations for scene traversal.
- Implemented multiple post-processing effects and the labeling of thousands of objects within a scene.

### Multiscale Molecular Visualization (Marion) - Nanovisualization Lab at KAUST

January 2020 - May 2020

- Converted a visualization tool used to render multiscale molecular data from an OpenGL to Vulkan.
- Programmed using C++ and GLSL under the guidance of Dr. Ivan Viola.

### Google Software Engineering, Tools and Infrastructure Internship

Summer 2018

- Generating and enforcing access control lists that restrict remote procedure calls within an integration testing framework. This feature allows developers to easily verify if their services are hermetic.
- Programmed with Python, internal frameworks and configuration languages under the guidance of Robert Dryke.

### Distributed Systems Experimentation Framework (DSEF) - Networked Systems Lab at USC

Summer 2016, 2017

- Developed DSEF which easily runs experiments on different types of distributed systems while measuring the throughput, latency, and the performance of the machines running the distributed system.
- Programmed using Python and Jupyter Notebook (IPython Notebook) under the guidance of Dr. Wyatt Lloyd.

## Education

### Master of Science in Computer Science - 3.96 Cumulative GPA

August 2019 - December 2020

King Abdullah University of Science and Technology, Thuwal, Saudi Arabia (KAUST)

### Bachelor of Science in Computer Science

August 2015 - December 2018

University of Southern California, Los Angeles, CA (USC)

## Projects

### Stock Price Prediction using Machine Learning

August 2019 - December 2019

- Implemented a stock price predicting application using time-series forecasting models using Python.

### Software Rasterizer and Raytracer

August 2019 - December 2019

- Developed a software-based C++ rasterizing and ray-tracing renderer that implements: Transformations, Blinn-Phong Shading, Texture Mapping, Soft Shadows, Anti-aliasing, and Glossy Reflections.

### Controls Lead - USC Hyperloop Design Team

August 2016 - May 2018

- Lead the controls team to develop the autonomous control system of the USC hyperloop pod.
- Control logic was programmed in C on a Texas Instruments MCU. Communications between subsystems were facilitated using CAN, TCP/IP, UDP, GPIO, and ADC.
- Built a Ground Control System to provide remote telemetry and emergency stop and manual control of the pod.

## Skills

- **Programming and Frameworks:** Python, FastAPI, C++, C, OpenGL, Vulkan, GLSL, CUDA, Qt.
- **Tools:** Git, Docker, MySQL, Docker Compose, Docker Swarm, Terraform, Bash, CMake.

## Achievements and Awards

- **USC Viterbi School of Engineering Dean's List** Spring 2016, 2017, Fall 2017
- **KAUST Gifted Student Program (KGSP) Scholarship - Recipient** May 2014 - December 2018