

# Varun Munagala

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## SKILLS

### PROGRAMMING

Proficient with:

C++ • OpenGL • Vulkan  
Rust • Python • Firebase  
Node.JS • JavaScript • Java  
Linux • Git

## LINKS

Portfolio [varunm100](#)  
Github:// [varunm100](#)  
LinkedIn:// [varun-munagala](#)

## EDUCATION

### SARATOGA HIGH SCHOOL

2018 - 2022 • 11th Grade

## TECHNICAL PROJECTS

### RTX VULKAN RAY TRACER | [PROJECT LINK](#)

- Simulates rays of light as they would in real-life to produce global illumination effects.
- Built entire engine from scratch using the low-level graphics api Vulkan and C++. Uses vulkan ray tracing extensions.
- Supports physically-based materials.

### PATH TRACER | [PROJECT LINK](#)

- Built using OpenGL and Processing.
- Supports basic diffuse and specular materials.

### VOXEL ENGINE | [PROJECT LINK](#)

- Renders millions of voxels (cubes) to create a maze-type structure.
- Implements 3d-perlin noise for randomized mazes.
- Built using OpenGL and C++ from scratch.

### TIME SERIES PREDICTOR | [PROJECT LINK](#)

- Implements several time-series algorithms for resource prediction.
- Includes LSTM RNN Neural Network, ARIMA, and polynomial regression.
- Built RNN using Keras in Python.

### P2P NETWORK | [PROJECT LINK](#)

- Implements a peer-to-peer network of nodes and propagates data through TCP sockets.
- Built in Java from scratch.
- Provides small set of utilities for propagating data across nodes and is fully multi-threaded.

### MONEY MANAGER APP | [GITHUB LINK](#)

- Built a small android app to manage a company's expenses and reimburse employees.
- Uses firebase to store company and employee data.

### SCREEN TIME MONITOR | [PROJECT LINK](#)

- Records and visualizes screen time activity on a timeline and provides usage statistics.
- Built using Electron and React.

## PROFESSIONAL EXPERIENCE

### ZEBI | [INTERN](#) • JULY 2017 - AUGUST 2018

- Developed ML and Big Data algorithms, primarily worked with Python and Java
- Helped prototype a P2P network that was eventually made into a private Blockchain.