# Stephen Jayakar

stephenjayakar.github.io
stephenjayakar@berkeley.edu | 903.932.5500

## EDUCATION

**UNIVERSITY OF CALIFORNIA, BERKELEY**
BS in Electrical Engineering and Computer Science
Expected May 2020 | Berkeley, CA
College of Engineering

**LONGVIEW HIGH SCHOOL**
Grad. May 2016 | Longview, TX
Valedictorian in I.B. Programme

## LINKS

LinkedIn:// **stephenjayakar**

## COURSEWORK

SICP
Data Structures
Computer Architecture
Discrete Mathematics
Algorithms

## SKILLS

**PROGRAMMING**
Experienced:
Python • Swift • LaTeX • Java
Familiar:
C • RISC-V ASM • Rust • JavaScript

**ENVIRONMENTS**
Xcode • iOS • Firebase • Bash • Windows • OS X • Unity3D

## INTERESTS

**MUSIC**
Violin • EDM • Guitar • Singing

**VIDEO GAMES**
League of Legends
Super Smash Bros. Melee
osu!

## EXPERIENCE

**OFFICE OF NAVAL RESEARCH** | Software Engineering Apprentice
May 2015 - July 2015 | Monterey, CA

- Created four highly-specialized data visualization structures using D3.js.
- Collaborated with my team member and professor to generate interactive graphs of her research data on Lexical Link Analysis.

**MOBILE DEVELOPERS OF BERKELEY** | iOS Engineer
Sept 2017 - Present | Berkeley, CA

- Completed a series of mini-projects to demonstrate Swift profiency which utilized techniques such as asynchronous database calls and live location monitoring.
- Designed wireframes and mockups for the application our team is developing using material design principles.

## PROJECTS

**ARYA** | Melee Research Framework
Mar 2017 – Present

- Developed a open-source project to read and interpret Super Smash Brothers' emulated memory as well as send reponsive controller inputs programmatically.
- Interfaces with Dolphin Emulator, an open-source project, by utilizing the MemoryWatcher API.
- Constructed a low-level pad input language to make sending specific Melee inputs intuitive.

**CAL-NES** | Nintendo Entertainment System Emulator
Oct 2017 - Present

- Hacked together a working 6502 CPU with support for all valid opcodes.
- Organized a team of four at Calhacks 4.0 to learn components of a valid NES.
- Added functionality to run iNES binaries, which is a format that mimics the actual game cartridges.

**3DENGINE** | Software Raytracer and Rasterizer
Apr 2017 - Present

- Built a live 3D raytracer to further my understanding of OOP and Linear Algebra.
- Also constructed a software rasterizer to delve into the basis of modern 3D rendering as well as techniques such as Z-Buffering and perspective transforms.

## AWARDS

| | | |
|---|---|---|
| 2016 | Regional | KETK Student of the Year |
| 2015 | Level 1 | UIL State Violinist |
| 2014 | Level 1 | UIL State Violinist |
| 2012 | Nationals 1st | Technology Student Association OSSD |