

Jacob Lopez

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EDUCATION

- **University of California, Berkeley** Berkeley, CA
Bachelor of Arts in Computer Science *Aug. 2015 – present*
- **Relevant Course Work:** Machine Learning, Artificial Intelligence, Operating Systems/System Programming, Compilers, Virtual Reality, Computer Security, Efficient Algorithms, Machine Structures, Internet, UNIX, Data Structures

EXPERIENCE

- **Socket Mobile, Inc** Newark, CA
Software Intern *Summer 2017 and 2018*
 - **Scanner Model Web API:** Developed a website that allows developers using our SDK to pull json data from the Azure database into their scanner applications. Created an Azure database and utilized the C# web api using .NET's MVC framework. Implemented an admin page for database maintenance, authenticated and secure login, account creation, and an sql database of users.
 - **Scan Engine Updater:** Developed a tool to install and update scan engine firmware over a serial connection. Implemented and utilized the YModem transfer protocol in C#.
 - **Automatic Sharepoint Uploader:** Developed several Powershell and python programs that use Microsoft's Sharepoint web api in order to authenticate and automatically upload new scanner firmware builds.
 - **Data Converter:** Implemented a C# helper application that compresses raw json data from a website, re-formats certain entries, and uses Microsoft's Azure C# library to insert the data into an Azure database.
 - **Firmware Installers:** Developed several Microsoft Installer applications with WiX and xml to install new firmware builds to internal testing machines.
 - **HID Keyboard Table scripts:** Developed a python program to map HID keyboard codes to keys based on different international keyboard layouts.
- **Cal Band Computer Committee** Berkeley, CA
Computer Assistant *August 2018 - Present*
 - **Members Only:** Implemented a page to handle rehearsal excuse requests in python. Automatically approves requests if the member still has their "free" pass. Uses the Django web framework. Currently working on javascript projects.

PERSONAL PROJECTS

- **Virtual Reality Drum Simulator:** Developed a virtual reality application for the Oculus Rift in which a user can practice playing on a drumkit in a virtualized environment. Written in C#/Unity. Implemented features such as teleportation to play different percussion instruments, the ability to record and play back beats or melodies, tactile feedback, etc.
- **Efficient Graphics Engine:** Designed an efficient 2D and 3D polygon/text graphics engine in C++ using OpenGL. Optimized code to render 10000+ textured sprites at 60 frames per second, implemented smooth text rendering and 3D "sandbox" mode.

PROGRAMMING SKILLS

- **Languages:** Python, C, C#, C++, Go, Java, javascript, xml, SQL, shell/batch scripting
- **Technologies:** .NET, Microsoft Azure, Django, Unity, Maya, Visual Studio, Linux, Windows

EXTRA

- **Super Bowl 50 Halftime show:** Performed as a drummer in the Super Bowl 50 halftime show with Beyonce, Coldplay, and Bruno Mars