

# Sam Hirsch

## Computer Engineer and Entrepreneur

801-824-2174

[sam.hirsch66@gmail.com](mailto:sam.hirsch66@gmail.com)

Salt Lake City, UT

[www.linkedin.com/shirsch75](http://www.linkedin.com/shirsch75)

[www.samhirsch.me](http://www.samhirsch.me)

### Education

**BS in Computer Engineering**, University of Utah – GPA 3.95

**September 2017 – December 2021 (anticipated)**

### Experience

#### **Undergraduate Research Assistant**

**Salt Lake City, Utah**

*Compiler Technology to Optimize Performance, University of Utah*

*May 2020 – Present*

Researching automatic tuning of C code with the director of the school of computing, Dr. Mary Hall, in conjunction with work at Argonne National Labs

- Investigating and comparing methods of developer guided code optimization for C kernel functions
- Performing architecture-oriented optimizations as well as parallel computing strategies

#### **Chief Technology Officer**

**Salt Lake City, Utah**

*Rexchanger, LLC*

*Aug. 2019 – Present*

Building the Rexchanger platform

- Lead the full-stack development of a peer-to-peer outdoor gear rental platform
- Building a scalable backend using Python and Django, hosted on AWS, and a cross-platform mobile app with Flutter
- Prioritize and plan development road-map and manage technical communication

#### **Web and Media Compatibility Intern**

**Paris, France**

*Compatibility Team, Streamroot Inc. (now a subsidiary of CenturyLink)*

*Sept. 2019 – Jan. 2020*

Developed Hearth and System for Integrated Logging and Control (SILC) for internal QA

- Developed iOS application and integrated with deployment chain for seamless QA of new SDK builds
- Built a companion webapp and CLI using bash and JavaScript to receive logs from the SDK and push test configurations to multiple devices in real-time
- Detailed the project on the company blog (<https://link.medium.com/JSUY3NqCM9>).

#### **Software Engineering Intern**

**South Jordan, Utah**

*Mobile Team, Lucid Software*

*May 2018 – Aug. 2018*

Maintained and improved Android application

- Built the process for photo uploading, the major feature in the 2.0 application release
- Developed and tested new rendering method as an important step in company roadmap

### Projects

#### **16-bit RISC Computer (Class Project)**

- Completely designed a fully-functional digital computer with Verilog-HDL and an FPGA board
- Worked with three other students to build a CPU based on the RISC processor and instruction set
- Wrote a Guitar Hero clone, in our custom machine code, that live-transcribes music to demo the CPU

#### **VR Arcade for Paralyzed Patients (Extended Class Project)**

- Worked with four other students to create a virtual reality arcade using Unity and SteamVR
- Cooperated with a research team at the University hospital to integrate the “Sip and Puff” device, to make the game accessible to paralyzed patients and help them practice using the device

#### **Re-implementation malloc and free in C (Class Project)**

- Only used the “mem\_map” and “mem\_pagesize” system calls to request memory space
- Achieved 60% performance compared to the libc implementation and 83% mapped memory utilization when run through a rigorous benchmark

#### **CleanFare (Personal Project)**

- Began developing a platform to reward use of clean transportation in High School to try and help my community
- Founded an LLC and built a mobile application, web platform, and functional backend throughout college

### Leadership

- TA for Electrical Engineering lab for non-majors (2020 – present) and Digital System Design course (2021 – present)
- Student Associate and Director of High School Utah Entrepreneurship Challenge (2018 – 2020)
- Summer camp counselor, canoe trip leader, lifeguard, and Wilderness First Responder (2019)