

## EXPERIENCE

### **Google, Software Engineering Intern – Summer 2018**

Developed a static analysis tool using LLVM to compute worst-case stack depth. Used this tool to compute the maximum stack depth of the vDSO (a userland interface to syscalls) and the Zircon kernel of the Fuchsia operating system. (C++)

### **Delcam, Software Engineering Intern – Summer 2014**

Developed a wizard for designing custom gears and a macro for computing turn-curve tolerance that got included in 'What's New' for FeatureCAM 2015 (a CAD/ CAM tool), among other feature requests and bug fixes. (C++)

## MASTERS RESEARCH PROJECTS

### **SweetPea, a Programming Language for Experimental Design – Masters Thesis**

Designed & implemented a domain specific programming language and runtime. The language allows scientists to declaratively describe the analysis they wish to perform, and the runtime synthesizes an experimental sequence with statistical guarantees that the sequence is unbiased. (Haskell)

### **Machine Learning under Custom Quantizations**

Investigated the effects of using different numeric representations on the accuracy of Perceptron. Numeric representations included custom small bit width floating & fixed point formats. (Haskell, Python, Bash)

## OPEN SOURCE PATCHES

### **Linux | CVE-2017-12762**

Found and patched a potential buffer overflow in an ISDN driver in the linux kernel. (C; Shared with Jiten Thakkar)

### **GHC Bugfix #12117**

Fixed a small bug in the Haskell compiler where incorrect variable shadowing produced incorrect error messages. Implemented at the Recurse Center. (Haskell)

### **ClangDoc #D48395**

Added a commandline flag to ClangDoc, a clang based documentation generator, to document only public declarations. (C++)

## SKILLS

**Programming Languages:** C++, Python, Haskell, Racket, C, Go, Bash, Scala, C#, Java

**Interests:** Compilers, Operating Systems, Security, Programming Languages, Machine Learning

## EDUCATION

### **M.S. University of Utah**

Computer Science, GPA: 4.0 / 4.0, December 2018 (expected)

### **B.S. University of Utah**

Major: Mathematics, Minor: Computer Science, GPA: 3.9 / 4.0, May 2015

### **Recurse Center**

Self-directed programming retreat, Summer 2016