Kaylee Lubick

Website: kayleelubick.com
GitHub: github.com/kjlubick

Work Experience

Software Engineer – Google 9/2015-Present

Work on Skia, the graphics library used by Chrome, Android and hundreds of internal teams. Projects include: setting up test device infrastructure; creating fuzzers to automatically identify potential vulnerabilities; creating CanvasKit a web assembly graphics library; developing Gold, a tool to make sure Skia draws correctly across a variety of platforms and hardware; creating Bazel build rules and a more modular build of Skia; optimizing performance of the CPU rendering pipeline; and fixing security bugs.

Tools/Skills C++, Go, Google Cloud, Typescript, Bazel, Linux, web components

Adjunct Professor – NC Central University 8/2020-12/2025

Designed and taught a curriculum for an introduction to Python course. 10 semesters

Tools/Skills Python, HTML/CSS, Canvas

Software Engineer Intern – Google 6/2015-8/2015

Created a visualization framework for a portion of Google's cloud services to aid in the managing and configuration of virtual machines.

Tools/Skills Python, Java, Google Cloud, AngularJS, D3.js, Test Driven Development

Graduate Research Assistant – NCSU 9/2013-5/2015

First research project was to design and test a social screencasting system, specifically the implications of intra-co-worker knowledge sharing.

Tools/Skills Java, JavaScript, AngularJS, HTML/CSS, EC2, MongoDB, SQL, git, bower

Undergraduate Research Assistant – Carthage College 6/2012-12/2012

Developed Storyteller, a granular version control system to aid in recreating the story of how code develops. Presented this work at SPLASHcon 2012.

Tools/Skills Java, JavaScript, AngularJS, HTML/CSS, SQL, Mercurial

Java Intern – TDS Telecom 5/2011-9/2011

Was involved in many different aspects of creating a new customer interface that allowed customers to modify their telephone, data and satellite plans via the internet.

iPhone Application Developer – Innocorp LTD 6/2010-9/2010

Developed a proprietary app to test impairment in a drunk person and encourage safety.

Tools/Skills XCode, Objective C, Test Driven Development

Education

M.S. (2013-2015): *North Carolina State University*, Raleigh, NC 4.00/4.00 GPA

Masters of Computer Science. Some of my favorite classes included Software Engineering, Spoken Dialog Systems, Intelligent Tutoring Systems, and DevOps.

B.A. (2010-2013): *Carthage College*, Kenosha, WI 3.93/4.00 GPA

Majored in Computer Science with minors in Physics, Math, and Spanish.

Technical Skills

Languages

Go, C++, TypeScript, HTML/CSS, Objective C

Tools

Linux, Bazel, Mac, Google Cloud, git, Kubernetes

Selected Projects

CanvasKit - a WebAssembly-powered graphics library for the web

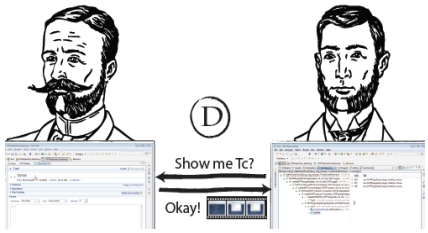
The Skia graphics library makes use of GL, Vulkan, Metal, and other GPU acceleration techniques to be a performant, powerful tool. I turned this C++ library into a WebAssembly library which uses WebGL to bring more powerful drawing features to the web than just a <canvas> element.
https://www.npmjs.com/package/canvaskit-wasm

Tools/Skills C++, Javascript, WebAssembly, emscripten

FindBugs and fb-contrib-quickfixes

FindBugs is an open source Java static analysis tool used to pre-emptively find questionable code and recommend solutions. I contribute new detection patterns, improved notification messages and quickfixes. I created an Eclipse plugin that automatically fixes many of these patterns and uses a full dev-ops build pipeline using Travis-CI. Any time code is committed, the plugin is automatically built, tested and deployed.

Tools/Skills Java, Test Driven Development, bytecode analysis, Travis-CI, Apache Ant



Social Screencasting

This project aims to automatically generate video screencasts from normal computer-based workflows. The thought is that if information workers have access to their coworker's screencasts, they will learn to use new tools, becoming more productive. The system recommends screencasts and tools, further improving productivity.

Tools/Skills Java, JavaScript, AngularJS, HTML/CSS, MongoDB, SQL, git, bower

Zero-g Fuel Gauge

Measuring how much fluid is in a tank while in space is hard, because the fluid sloshes around and there is no "up" or "down". When I was an undergrad, I worked as a part of the Carthage Microgravity team to solve this problem for NASA. One of the challenges I faced was designing a user interface that could be used to easily collect data in zero-g.

Tools/Skills LabView, electrical analysis, soldering, signal analysis techniques (FFT)

Publications

Do Developers Read Compiler Error Messages?
Barik, Smith, Lubick, Holmes, Feng, Murphy-Hill, Parnin, ICSE 2017

Fuse: A Reproducible, Extendable, Internet-scale Corpus of Spreadsheets
Barik, Lubick, Smith, Slankas, Murphy-Hill, MSR 2015

Can Social Screencasting Help Developers Learn New Tools?
Lubick, Barik, Emerson Murphy-Hill, CHASE 2015

Commit Bubbles Barik, Lubick, Murphy-Hill, ICSE, New Ideas and Emerging Results Track, 2015

How Developers Visualize Compiler Messages: A Foundational Approach to Notification Construction Barik, Lubick, Christie, Murphy-Hill. 2nd IEEE Working Conference on Software Visualization, 2014

A sounding rocket payload experiment on zero gravity fuel gauging using modal analysis

Crosby, Ireland, Lubick, Mathe, Metallo, Werlink, Proceedings of the Wisconsin Space Conference, 2013

Reduced Gravity De-gassing of Perfluorohexane Coolant Using a Radial Membrane Contactor (Poster)
Weiland, Favela, Gear, Lubick, Mathe, Robinson, Schofield, Crosby, Hall, ASGSR, 2013

Modal Evaluation of Fluid Volume in Spacecraft Propellant Tanks
Mathe, Anderson, Bakkum, Lubick, Robinson, Weiland, Werlink, Crosby, Proceedings of the Wisconsin Space Grant, 2012