

Ray Stubbs

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Education

New Mexico State University — Las Cruces, NM

Bachelor of Science in Computer Science, May 2015 - May 2019 (expected), **GPA 3.8**

I started at NMSU immediately after high school and was recruited as a research assistant by one of the research groups (NSOL) associated with the computer science department within my first semester. Thereafter I spend most of my time at NMSU doing research and software development with this group. The lab's focus was on network security and its application to IoT (the Internet of Things). While I got some exposure to the networking side of things during my time here, my main contributions were in the domain of systems programming as I was charged with developing firmware for several microcontrollers and SoCs (System on Chips).

University of New York in Prague — Prague, Czech Republic

Studied Abroad, January 2019 - May 2019

I studied abroad for a semester in Prague, actual am still here. I finished most of my degree requirements early so figured I'd might as well use my extra semester of funding to study abroad and gain some cultural experience.

University of Korea in Sejong — Sejong City, South Korea

Studied Abroad, February 2017 - June 2017

This was my first experience studying abroad. I spent a semester in South Korea living with two native roommates.

Skills

Development Skills

- Object Oriented Programming and Design Patterns
- Functional Programming and Idioms
- Systems and Embedded Software Development
- Programming Language Development

Programming Languages

C, Java, C++, Python, JavaScript, Scheme, Go, Lua, Haskell

Technologies and Frameworks

Linux, Unix, Posix, Git, HTML/CSS/JS, Angular, Vue.js, JQuery, Jekyll, Android

Experience

Research Assistant — NSOL (Networks and Systems Optimization Laboratory)

New Mexico State University, October 2015 - December 2018

Though I worked with NSOL as a *part time* research assistant, this is really where I dedicated most of my time during my earlier years at university. The entry level courses were pretty trivial and the projects I was assigned by the group were much more interesting than the course material. Responsibilities included the design and

implementation of networking software and embedded systems firmware.

Miscellaneous

I've also spent some time here and there working in construction (drywall in particular), farm labor, and tech assistance; though these positions are mostly irrelevant to my career path.

Open Source

Rig — A Simple Scripting Language

www.rig-lang.io — MIT

Perhaps my largest contribution to the open source community has been Rig, a small scripting language designed to be simple, consistent, and portable. The language is compiled by an efficient single-pass compiler into a compact bytecode which is interpreted by the VM. The entire project is written in portable C99, so can be compiled for most platforms (including embedded systems) without modification.

InA — A Command Line Argument Parsing Library

www.github.com/raystubbs/line-arg — MIT

Though smaller than Rig, InA (or line-arg) is a tiny and portable library for parsing command line arguments. Implemented in just over 300 semicolons of portable C99 code, the library derives valid command usage patterns by parsing standard usage strings as specified in Unix man pages or help menus.

LibRaff — A Parsing and Manipulation Library for RIFF

www.github.com/raystubbs/libraff — MIT

Perhaps the most comprehensive open source library for parsing and manipulating RIFF based file formats as WAV and AVI. This project arose out of my need for a library which could both parse and create RIFF files at a lower level than is possible with WAV and other libraries; such a thing didn't seem to exist at the time.

Publications

TACTIC

Reza Tourani, Satyajayant Misra, and Ray Stubbs, "TACTIC: Tag-based Access ConTrol Framework for the Information-Centric Wireless Edge Networks," IEEE ICDCS 2018

This was a paper I worked on with some of the other members of the NSOL team, it describes a framework for implementing access control in ICN (Information Centric Networking) networks, which has thus far been a pretty major concern in the community.