Randolph Y. Liang

(571) 296-6786
randy8@vt.edu

Education

Blacksburg, VA **Virginia Tech** **Aug 2014 – Present**

- **B.S. in Computer Science** with Minor in Mathematics, **December 2018**
- **GPA: 3.1,** Dean's List Spring 2017
- Coursework: Data Structures and Algorithms, Computer Systems, Data Structures and Software Design, Problem Solving in CS, Comparative Languages, and Human-Computer Interaction

Employment

Software Engineer, Co-Op **Leidos, Inc.** **May 2017 – Dec 2017**

- Researched vulnerabilities and developed exploits for various IoT Devices.
- Learned branching strategies/team conventions and agile development practices
- Spearheaded the production of a virtualized network using Vagrant to automatically setup/deploy Linux and Windows VMs, developed configuration server in C#, and integrated a multilingual Android chat application. Gained insight on networking and became familiar with Ruby and Wireshark.
- Independently built a Python GUI with TKinter to manipulate OSM map data. Gained familiarity with Python and web-scraping, which inspired a personal Twitter bot project.

Technical Experience

School Projects

- **Extensible Shell (C) –** with process management for various UNIX commands, job control, and plugin support. Takes line-by-line input from the command line (e.g. moving a process to foreground) and supports piping and I/O redirection.
- **Memory Manager (Java) –** a memory management package for storing records consisting of songs/artists from a million-song database, relying on a hash table to store handles that point to the song/artist index in the memory manager. Implements a range query by utilizing a B+ tree of order 3 (i.e. 2-3+) to retrieve songs written by a specific artist and all artists who've written the same song.
- **Modified Quicksort (Java) –** implements a variant of quicksort for binary data. The data contains numerous 4-byte records that consist of two 2-byte short integer values (a key value for sorting and a data value), ranging from 1 to 30,000. A buffer pool is used to mediate the access to the file (in an array), storing 4096 byte blocks and is organized via the LRU replacement scheme.

Personal Projects

- **randyliang.com (HTML/CSS, JavaScript) –** website with miscellaneous personal information with links to résumé, projects on GitHub, and email. **<!-- QR code -->**
- **Lyric Bot (Python) –** Twitter bot that scrapes lyrics from the web and tweets them every 30 minutes. (WIP)
- **Custom Chipotle Order (XML, Java) –** Android application that relies on user input to determine cost and nutrition for a Chipotle order using local (Blacksburg) prices/tax rates.

Languages and Technologies

- Java*, C*, C++^, Python^, Ruby on Rails^
- MongoDB^, Bootstrap^, SQL^
- Git*, Eclipse*, IntelliJ*, GNU/Linux (Debian and RPM)*, Wireshark^

*** = Proficient, ^ = Familiar**