

RANDOLPH Y. LIANG

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EDUCATION

Blacksburg, VA	Virginia Tech	Aug 2014 – Present
<ul style="list-style-type: none">• 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 – Jan 2018
<ul style="list-style-type: none">• Researched vulnerabilities and developed exploits for various IoT Devices.• Created a virtualized network using Vagrant to automatically setup/deploy Linux and Windows VMs and integrated a multilingual Android chat application, observing network traffic through Wireshark. Gained insight on networking and became familiar with Ruby.• Built a Python GUI for OSM map data using Tkinter. Gained familiarity with Python and web-scraping, which inspired a personal Twitter bot project.		

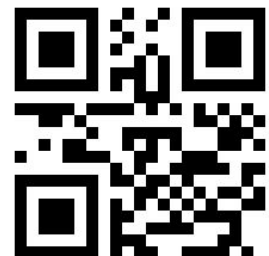
TECHNICAL EXPERIENCE

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
- Eclipse, IntelliJ, Git, GNU/Linux (Debian and RPM), Wireshark

* = Proficient

^ = Familiar

