

HONGZHI LIU

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SUMMARY STATEMENT

Electrical and Computer Engineering graduate student with particular interest and solid foundation to pursue a software developer position, also with interest on machine learning, image processing and data mining.

EDUCATION

University of Massachusetts, Amherst, MA

Master of Electrical and Computer Engineering

Feb 2018

Cumulative GPA:3.45

Beijing Technology and Business University, China

Bachelor of Electrical Engineering

Sep 2012

Cumulative GPA:3.30

RELEVANT COURSES

System Software Design (C++), Algorithms, Data Structure (C++), Programming Abstractions (self-learning from Stanford CS106B and CS 106X), Computer Network, Trustworthy Computing, Digital Image Processing (MATLAB), Mining of Massive Datasets, Probability and Random Process.

SKILLS

Programming Scripting Language: C++(Proficient), C, JAVA, MATLAB, Python

Environment and Tools: Linux, Mac, Vim, GitHub, Markdown

PROJECTS

Secure Instant Messaging (Java)

Fall 2016

- Design an online chat room with strong focus on the perspective of security
- Multithread socket-programming to provide communication between multiple clients with server.
- Design a multi-layer structure to provide sophisticated secure communication service, including the application of SSL, AES, and RSA.

Cubic vs Reno (GENI)

Fall 2016

- Performance Analysis and Comparison of Two TCP Congestion Control Algorithms under different traffic conditions using GENI (Global Environment for Network Innovations) and GNUPLOT.
- The performance is analyzed and evaluated with the respect to the following measurements: *congestion window, threshold, throughput and data rate.*

Thread library and Disk Scheduler (C++)

Spring 2017

- Write a user-level library to support multiple threads within a single Linux process.
- *Ensure Atomicity, Scheduling order and Error handling. Grading by auto-grader: 100/100*

Pager – Virtual Memory Management (C++)

Spring 2017

- Implement an external pager that handles virtual memory requests for application process.
- Handle address space creation, read and write faults, address space destruction, and simple arguments passing between spaces.

Stack Smashing (C++, GDB)

Spring 2017

- Find the stack vulnerabilities and implement attacks with the aid of GNU Debugger(GDB) to compromise several vulnerable processes running inside a VM.

Fun with Data Structure (C++)

Self-Project

- Implementing various of data structures: Stack, Queue, Linked List, Hash Table, Binary Search Tree, Binary Heap and Graph, and also relevant algorithms, like DFS, BFS, Dijkstra and so on...

Hyperspectral Image Segmentation(MATLAB)

Fall 2017

- Hyperspectral Image (more than 4 gigabytes) Segmentation *using a combination of PCA (Principle Component Analysis) and K-means approach.*
- A test accuracy of 95% was obtained from the ground truth image;

CAREER EXPERIENCE

Beijing Ether Peony Elec. Eng. Co. Ltd.

Electrical Engineer

Feb 2013 – Jan 2015

Mainly responsible for design and implementation of electronic security system: video security system, access control system and alarm system for modern building and large data center.