Wenkai Zheng

(+1)801-300-9004 | wenkai.zheng@emory.edu | wenkaizheng | wenkai-zheng

Education

Emory University *Atlanta, GA*
M.S. in Computer Science *May 2022*
- Courses: Advanced Algorithm, Graph Mining, Artificial Intelligence

University of Arizona *Tucson, AZ*
B.S. in Computer Science *May 2020*
- Courses: Computer Organization, Unix System Programming, Operating System, Computer Network

Technical Skills

Knowledge	Software Development, Computer Network, Operating System
Software Engineering	System Programming, Network Programming, Object Oriented Programming
Web Development	MySQL, MongoDB, Html, JavaScript
Languages	C, C++, Python, Java, Go, Assembly, (Linux) Shell

Work Experience

Research Assistant in Computer Network Lab *Tucson, AZ*
Supervised by Prof. Beichuan Zhang in University of Arizona *Aug. 2019 - Aug. 2020*
- Research topic in NDN (Named Data Network)and NFD (NDN forwarder daemon).
- Code refactoring (replaced deprecated type with newly designed type)for the NDN C++ library.
- Completed the command line tool for network characteristic analysis such as round-trip-time and jitter, and supported user guide, auto-completion, and data visualization (Python GUN plot).
- Completed the cloud storage checking script to check the insert,update and delete in any file from storage. If detected any change, downloaded, encoded, packaged and chunked the file into MongoDB.

Teaching Assistant for System Programming and Unix *Tucson, AZ*
Worked with Dr. Eric Anson in University of Arizona *Jan. 2019 - May 2019*
- Graded the 10 programmings assignments,2 exams and 12 quiz.
- Held the weekly office hours to assist students solve problems in the class.

Projects

Make command mechanism simulator from Linux
- Parsed the Makefile and saved all targets,dependencies into Linked-Lists.
- Implemented DFS algorithm and run it within Linked-Lists.
- Compared the last modified date with targets and dependencies for executing corresponding Linux commands.

Lightweight OneNote
- Enabled users to make records (auto save)about each section and each page by using Java.io library.
- Provided a panel for users to draw pictures and type words by using JavaFx.
- Allowed users to play videos and visit websites in by using Java.net library.

IP router
- Constructed the Ethernet packet include the IP packet and ARP packet.
- Implemented ARP and IP protocol for each network packet include the BoardCast,unicast and Arp cache.
- Enabled user to download file by using this self-implemented IP router within specific local network.

Mini version of Shadowsocks
- Encapsulated the network traffic amongst network firewall.
- Implemented Socks5 protocol to establish external connection by verifying and responding network packet.
- Allowed different users to login at the same time from different platforms (Windows, Mac, Linux).

Single-core CPU simulator
- Implemented process management, mutex mechanism, and functions in kernel and user mode e.g. fork, join.
- Implemented Disk Read/Write function, memory mapping includes swap in and swap out within Disk (Clock Algorithm).