Joshua Kim

41 Overpeck Avenue #1
Ridgefield Park, NJ 07660

(201) 566 - 8553
joshuabhkim@gmail.com

Education

Rutgers University - School of Arts and Sciences, May 2018
B.S. in Computer Science with Minor in Mathematics, GPA: 3.40

Projects

Operating System (2018)

- Implemented a simple, Unix-style OS framework, which supports user threads, pseudo-virtual memory allocations, and a Filesystem in Userspace (FUSE).
- Created a scheduler that utilizes a multilevel priority queue, each with different time quanta, to schedule user threads, which were implemented using the Linux pthread API.
- Assisted with memory management by creating malloc() and free() functions to document thread metadata in physical memory which was emulated by a static char array.

Recursive Descent Parser/Code Generator (2017)

- Created a basic, front end of a compiler to perform lexical analysis and create Reduced Instruction Set Computer (RISC) machine instructions for the tinyL language.
- Optimized ILOC instructions by recursively eliminating dead code via doubly linked list traversal and memory deallocation of structs that held "eliminated" instructions.

BitTorrent Client (2016)

- Created a simple, BitTorrent Client to download a .mov file via a single peer.
- Implemented custom Java classes (Torrent, Message, HandShake, etc.), which were used to parse torrent metadata, assemble a valid list of peers, and ping such peers to find one with the lowest, average round-trip time for SHA-1 hashing and downloading.
- Implemented a peer messaging protocol to distinguish incoming messages by their type (choke, unchoke, interested, etc.) and to determine an appropriate response from the client.

Y86 Emulator (2016)

- Created an emulator that reads a Y86 input file, allocates a chunk of memory, and populates the chunk of memory with data and machine instructions to execute Y86 machine instructions.
- Designed the fetch-decode-execute cycle by implementing Y86 directives and opcodes as enumeration types running in a series of switch-case statements that were nested in a loop.

Computer Skills

Languages: Java, C, Racket, MATLAB, HTML, CSS
Technologies / Tools: Git, Vim, Eclipse, Hugo, Unix

Awards & Accomplishments

Publicis.Sapient Hackathon Winner (2018)
OTEFE Foundation Scholarship (2016)
Academic Excellence Award (2015)

Extracurricular Activities

Vice President of External Relations, Delta Upsilon Fraternity

- Implemented an alumni-undergraduate mentorship program to assist active undergraduate brothers with professional advice and guidance.
- Assisted in raising over $40,000 for the Embrace Kids Foundation, a philanthropy organization aiming to improve the quality of life for families whose children are facing cancer, sickle cell, and other serious health challenges.