Jesse Zhang

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EDUCATION

Bachelor of Science, Computer Engineering
University of Illinois, Urbana, Illinois
Relevant Coursework: ECE 411 Computer Organization & Design, ECE 391 Computer Systems Engineering, CS 423 Operating Systems Design, ECE 408 Applied Parallel Programming, CS 225 Data Structures

AWARDS

National Science Foundation REU Fellowship

PUBLICATIONS

Kim, M., **Zhang, X.**, Milenkovic, O. (2016). MetaCRAM: an integrated pipeline for metagenomic taxonomy identification and compression. *BMC Bioinformatics*. 17:94.
Kim, M., **Zhang, X.**, Milenkovic, O. (2014). *Parallel Compression of Metagenomic Sequences via Extended Golomb Codes* Selected for a platform presentation at the Biological Data Science Workshop, Cold Spring Harbor Laboratory, November 2014

WORK EXPERIENCE

Apple - *Software Engineering Intern* *In Progress*

Fulcrum GT – *Software Engineering Intern* Summer 2015 - Now

- Launched Epoch, a legal time entry solution, at ILTA 2015
- Primary iOS backend developer – responsible for designing and implementing the data model in Core Data for Epoch
- Explored location and physical activity tracking, as well as geo-fencing, using Core Location and Core Motion frameworks
- Designed overall program flow for asynchronous activities using NSNotification-Center, libdispatch, delegates, and closures

ECE 391 – *Course Staff* August 2015 - Now

Coordinated Science Lab – *Research Intern* Summer 2014 - Summer 2015

- Automate parallelized DNA compression and maximize DNA compression ratio
- Developed the Extended Golomb Code compression scheme adapted for DNA read-specific statistical distributions

PROJECTS

ECE 411 – *SystemVerilog*
WenMeiCrwu – Pipelined LC-3 CPU with L1, L2 Caches

- Implemented basic structure of the pipelined CPU
- Implemented L1 and L2 caches
  - Multicycle 4-way set associative L2 with true LRU replacement policy
  - Eviction Write Buffer, Victim Cache, and Hardware Prefetching in the memory hierarchy

ECE 391 – *x86 Assembly, C*
Za Big New OS – Linux-like operating system

- Implemented the PIC configuration code and developed the interrupt handlers for the keyboard and RTC
- Implemented the Linux ext2 file system with both read and write functionality
- Developed the system calls for device and file I/O as well as the execution and halting of a task
- Implemented the C Standard Library as well as C runtime in conjunction with the native runtime

BoilerMake – *C, Java, Objective-C*
HackedReality – virtual reality using Google Cardboard (*Winning project 2014)*

- *Developed a driver for a DDR Dancepad to mimic the omni-directional treadmill and implemented dynamic remapping of the dancepad buttons*
- *Used the magnetometer in Android phone to track the user's orientation*
- *Used the Pebble smartwatch to track the user's body motions*

TECHNICAL SKILLS

Languages: C, x86 Assembly, Swift, SystemVerilog, C++, Perl, Java, Objective-C