

# Jesse Zhang

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- EDUCATION** *Bachelor of Science, Computer Engineering*  
University of Illinois at Urbana-Champaign  
Relevant Coursework: ECE 511 Computer Architecture,  
ECE 411 Computer Organization & Design, CS 461 Computer Security I,  
ECE 391 Computer Systems Engineering, CS 423 Operating Systems Design,  
ECE 408 Applied Parallel Programming, CS 225 Data Structures
- PUBLICATIONS** Kim, M., **Zhang, X.**, Milenkovic, O. (2016). MetaCRAM: an integrated pipeline for metagenomic taxonomy identification and compression. *BMC Bioinformatics*. 17:94.
- WORK EXPERIENCE**
- Apple - Software Engineering Intern** Summer 2016
- Developed a proof-of-concept iOS app for retail store inventory management
  - Interacted with SAP systems on the backend
  - Participated in designing the service calls and the overall program flow
- Fulcrum GT – Software Engineering Intern** Summer 2015
- 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 NSNotificationCenter, libdispatch, delegates, and closures
- ECE 391 – Course Staff** August 2015 - Now
- Coordinated Science Lab – Research Intern** May 2014 - August 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**  
WenMeiCraw – 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** *Programming Languages: C, Assembly, Swift, SystemVerilog, C++, Perl, Java*  
*Languages: Chinese, English*