Jesse Zhang

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EDUCATION

Bachelor of Science, Computer Engineering
University of Illinois at Urbana-Champaign
Relevant Coursework:

- Computer Architecture
- Computer Organization & Design
- Computer Systems Engineering
- Computer Security & Lab
- Operating Systems Design

WORK EXPERIENCE

Yahoo - *Software Engineer I* August 2017 - Now

- Working on testing and build systems for Apache Traffic Server (ATS) using the Reusable Gold Testing System framework (AuTest) and partially BuildBot
- Implemented new features and community requests into AuTest for ease of test writing and readability
- Improved overall functional testing reliability for the project
- Implementing a set of automatic replay tools for ATS that replays captured production traffic in an isolated environment for reliability testing

Apple - *Software Engineering Intern* Summer 2016

- Developed an iOS app with SAP integration for retail store inventory management
- Designed new SAP service calls for the inventory pipeline

Fulcrum GT – *Software Engineering Intern* Summer 2015

- Launched Epoch, a legal time entry solution using SAP, at ILTA 2015
- Designed and implemented Epoch's backend systems
- Explored various iOS frameworks and APIs for location tracking, geo-fencing, and physical activity tracking

PUBLICATIONS

Kim, M., **Zhang, X.**, Milenkovic, O. (2016). MetaCRAM: an integrated pipeline for metagenomic taxonomy identification and compression. *BMC Bioinformatics.* 17:94.

PROJECTS

Pipelined CPU with Cache Subsystem – *SystemVerilog*

- Designed and coded the 5 stages of a CPU pipeline
- Implemented L1 and L2 caches with 4-way set-associativity and true LRU replacement policy as well as components such as eviction write buffer, victim cache, and hardware prefetching

Linux-like Operating System – *x86 Assembly, C*

- Supports various drivers such as the EXT2 filesystem, IDE controller, PIT, PIC, and keyboard
- Implemented the system calls necessary for the C Standard Library as well as C runtime

TAGE Branch Predictor – *C++*

- From the paper *A case for (partially) tagged Geometric History Length Branch Prediction* by Andre Seznec and Pierre Michaud
- Modified the GEM5 simulator's built-in out-of-order ARM processor's branch predictor to use the TAGE predictor

HackedReality – *C, Java, Objective-C*

- Virtual reality simulator using Google Cardboard (Android phone), Pebble smartwatch, and a PS2 DDR Dancepad
- Reverse-engineered a USB dancepad to mimic an omni-directional treadmill with dynamic directional remapping of the buttons

TECHNICAL SKILLS

Programming Languages: Python, C++, C, x86 Assembly, Swift, SystemVerilog, Java
Languages: English, Chinese