Lun (Given Name) Liu (Family Name)

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School of Software
Shanghai Jiao Tong University, Shanghai, China
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Education

2011–2015, School of Software, Shanghai Jiao Tong University.

BEng in Software Engineering

GPA: 3.88/4.3; Average Major Grade: 89.88/100; Rank: 4/103.

2008–2011, No.1 Middle School Attached to Central China Normal University.

Research Interests

Performance and Reliability of Computer Systems

Programming Model and Runtime for Multicore and Distributed Systems

Research Experiences

Member of Institute of Parallel and Distributed Systems (IPADS)

Systems and multicore related researches, Advised by Prof. Haibo Chen.

1. 2014.02–current, **Transparent Parallel JavaScript Execution Using HTM**.
   Try to leverage Hardware Transactional Memory (HTM) to provide transparent parallelism support for JavaScript execution. We are now trying to implement a prototype (based on v8, the JS engine used by chrome) that automatically parallelize the loops in JS applications. This work is still in progress.

2. 2013.09–2014.02, **Recovering Parallelism for Transactional Lock Elision with LockEnd**.
   Tuned retry policy and proposed a new approach to allow safe concurrency between the lock-based fall-back handler and transactional code when using best-effort hardware transactional memory (BEHTM), by moving checking of lock status to the end of transactional code. Proved the correctness of that method and showed that it can improve the scalability of Stanford Transactional Applications for Multi-Processing (STAMP) benchmarks significantly.

Research Intern at University of California, Los Angeles (UCLA)

UCLA Cross-disciplinary Scholars in Science and Technology (CSST) Research Program, Advised by Associate Prof. Todd Millstein.

2014.07–2014.09, **Historical Analyses of Network Configurations**
Carried out a series of historical analyses of network configurations to see how real networks evolve overtime and how some static analyzer meet the requirements of real-world networks. Also categorized most common change patterns for network configurations, trying to cast some light on how to improve the existing analyzer.

Course Projects

2014 **Computer Architecture**

A Simulation of cache replacement policy using PIN.

2014 **Distributed Systems**

Implemented reliable data transport (RDT) protocol, DSDV routing protocol, a MapReduce library and a fault-tolerant key/value service using a form of primary/backup replication in GO.

2013 **Operating Systems**

Implemented booting, memory management, user environments and preemptive multitasking of an exokernel-like system (JOS).

2013 **Principle and Technology of Compiler**

Simplified C language and implemented a compiler to compile that language into AT&T assembly.

2012 **Computer System Engineering**

Implemented a Frangipani-like distributed file system with lock and cache support (YFS).

2012 **Principle and Technology of Database**

A simple online library using SQL database.

2012 **Introduction to Computer Systems**

CSAPP labs: bits operations, binary bombs, buffer overflow, Y86 simulator, Y86 assembler, memory allocator, pipeline processor optimizations, cache related optimizations and shell.

Scholarships and Honors

Oct, 2014, IBM Outstanding Student Scholarship (top 5%).

Feb, 2014, UCLA CSST Scholarship (92 students in total in all disciplines from China and Japan).

Oct, 2013, Shanghai Jiao Tong University (SJTU) Xin Dong Scholarship, the First Prize (top 5%).

Oct, 2012, National Scholarship of China (top 2%).

Social Experiences and Other Activities

Member of SJTU Network Information Management Organization (NIMO)

- 2011.09–current. Responsible for campus network management and maintenance

- Became a core member in 2013

"Return to Alma Mater" Activity

- 2012.07. Went back to high school to give advices on study habits, major choosing and other related questions

- Participated in the QA with the students and their parents

Volunteering Activities

- 2013 Shanghai Dongli Cup Marathon volunteer

- Voluntary blood donation regularly

Sports

- SJTU SEIEE women basketball team. SJTU Tizong Cup: Semi-Finals (11–12, 12–13); Championship (13–14)

- Level Three National Basketball Referee

Miscellaneous

- The UCLA Gag Award for CSST 2014: The Cool Girl