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Xiaoyu Hu

Technical Skills

LLVM: Familiar with LLVM IR, structure of LLVM project, and program analysis using LLVM pass.

Web Programming: Familiar with frontend and backend of building web applications using JavaScript, Python and MongoDB.

Programming Languages: C, C++, Python, Bash, Ruby, JavaScript, Java, Assembly (AArch64 and x86).

Work Exprience

Samsung Austin Research Center Austin, TX, USA

1. Build automation infrastructure and web application for test builds, data analysis and visualization.
2. Analyze compiler binary output performance, suggest performance improvements and implement patches for improvements.
3. Build infrastructure to monitor compiler performance changes and correctness bugs, and feedback to community.

Education

University of Rochester Rochester, NY, USA
Master of Science in Computer Systems anticipated May 2015

Operating Systems: Understanding in basic Operating Systems concepts.

Computer Architecture: Understanding in memory hierarchy, and Out-of-Order CPU execution.

GPU Programming: Studied GPU architecture and CUDA programming on GPU.

Software Analysis: Programming language analysis, including value numbering and dataflow analysis.

Parallel and Distributed Systems: Studied pthreads, MPI, Hadoop, synchronization, and consensus protocol.

Zhejiang University Zhejiang, China
Bachelor of Engineering in Instrumentation Science June 2013

Data Structures Fundamentals: Fundamental algorithms and data structures.

Software Engineering: Classic Waterfall Development and Agile Development Methodology.

Database Concepts: Understanding in Relational Database Management Systems and SQL language.

Research Experience

University of Rochester Rochester, NY, USA

Research Project Sep 2014 - Dec 2014
Static analysis of Linux program capabilities using LLVM infrastructure, under advisory of Professor John Criswell. Learned the basics of LLVM and program analysis with LLVM passes, and implemented a prototype of inter-procedural analysis tool for removing unnecessary capability in programs.

Research Assistant May 2014 - Aug 2014
Assisted in building, testing and evaluating tools for fast dynamic algorithm for GPU data race detection under advisory of Professor Chen Ding. Collaborated on publication:
P. Li, C. Ding, X. Hu and T. Soyata, "LDetector: A Low Overhead Race Detector for GPU Programs," in 5th Workshop on Determinism and Correctness in Parallel Programming (WoDet 2014), Salt Lake City, UT, Mar 2014.