Xu Zhang

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Education

- **Ph.D.** student in Computer Science Univ. of Illinois at Chicago (UIC) 08/2009 ~ current GPA 3.9
  - *Research Interests*: Operating Systems and Security
- **B.S.** in Software Engineering Wuhan University, China (WHU) 09/2005 ~ 06/2009 GPA rank 6%

Experience

- **Research Assistant**, Dept. of Computer Science, Univ. of Illinois at Chicago 05/2010 ~ present
  - **Kernel Stability of Ethos**—an operating system aimed for security. (C, Xen, Ethos kernel, assembly)
    - Process memory leak trace-down and fix-up.
    - Made Ethos self-recover from process memory exhaustion.
  - **Ethos-64bit Porting Improvements**. Diagnosed and isolated Ethos-64bit network hang. Reliable network protocol fix-up. Bug-fix in Ethos-64bit kernel entries. (C, Ethos kernel, Xen, assembly)
  - **Ethos Markup**. Implemented a document object model with collaboration-control awareness for Ethos markup language in Go programming language. (GoLang)
- **Selected Projects**, Dept. of Computer Science, Univ. of Illinois at Chicago 01/2010 ~ 12/2011
  - **Para-virtualized Guest OS Programming**. Built virtualized device drivers, a slab and buddy memory allocator, and a PAE page table walker for a para-virtualized guest OS. (C, gdbsx, Linux, nanoOS, Xen)
  - **Real-world Exploiting and Defending**. Exploited vulnerabilities—buffer overflow, SQL injection, and cross-site scripting/request forgery—in real-world applications and issued attacks. Made retrofits to defend. Also implemented a naive intrusion detection system. (C, Java, MIPS, SQL, Javascript, libpcap, Linux)
  - **Network Programming and Researching**. Carried out a series of network programming and experiments, including global network measuring, MAC protocol simulation, DNS resolution, reliable protocol construction, and etc. (C, socket, bash scripting, tcpdump, wireshark, libpacp, Linux, Planet-Lab)
  - **Parallel Processing**. Implemented several parallel algorithms, including matrix multiplication, LU decomposition, and TSP, using self-implemented communication interfaces. (C, MPI, UIC Argo cluster)
  - **Cache Optimization Simulation**. Modified SimpleScalar to add two more cache optimization techniques—way prediction and critical word first. Improvement was measured. (C, SimpleScalar, Linux)
- **Teaching Assistant**, Dept. of Computer Science, University of Illinois at Chicago 08/2009 ~ 08/2010
- **Summer Internship**, State Key Laboratory of Software Engineering, Wuhan Univ. 08/2008 ~ 09/2008
  - **Enterprise Web Service Development**. (J2EE, Win32)
- **Selected Projects**, Dept. of Software Engineering, Wuhan Univ. 2006 ~ 2008
  - **Compiler Construction**. Built a lexer and a parser for a language that supports enriched semantics such as recursion and function overload from scratch, without help of lex and yacc. Re-implemented later with flex and bison, and generated MIPS instructions. (Java, Eclipse, Win32, C, flex, bison, MIPS, Linux)
  - **FTP Server** (group work). Implemented an FTP server that supports a good collection of file operations with appropriate access control. (C++, OOP, ftp, lib ACE, Win32)
  - **HTML Parser** (group work). Implemented a lexer for HTML, which is the sub-module of an HTML parser. Second prize winner in a departmental competition. (Java, Eclipse, Win32)

Honors and Activities

- Coordinator for department weekly-held Advanced Programming Seminar series, UIC, 2012 ~ present
- University Honored Graduates, Wuhan University, 2009
- Outstanding Student Scholarship (5%, 8%), Wuhan University, 2006 ~ 2008
- Second Prize, Software Design Competition, Dept. of Software Engineering, Wuhan University, 2007
- SAN-HAO Student Award (for top 8%), Wuhan University, 2006 ~ 2008