Lu Shengliang

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Education

B.Eng. Computer Engineering *Anticipated Graduation: May 2016*
NTU, Nanyang Technological University, Singapore

- CGPA 4.53 of 5.00
- Dean's List of Academic Year 2014/15

NTU President Research Scholar

Senior Middle 3 Scholar

Research and Internship Experience

Final Year Project, Secure Microkernel Design *Aug 2015 - Present*

- Studying XtratuM bare-metal hypervisor
- Reading and Debugging C code and SPARC assembly code
- Learning hypercall and trap handler mechanism

Internship, Building of a GPU Computing Research Cluster *Jul - Oct 2015*

- Attached to Rapid-Rich Object Search Lab, NTU
- Used Rocks cluster distribution
- Configured head node and compute nodes network connections
- Used Docker for Cuda GPU computing and LXC for resources provision and control

Undergraduate Research Project, Study of Healthcare and Wellness Science using Wearable Sensors through Scientific Literature Approach *Sep 2014 - Jun 2015*

- Attached to Neural & Biomedical Technology Department (A*star I^2R Singapore)
- Developed a text mining tool using Perl & Python for analyzing research publication abstracts
- Solved case studies of 300,000 samples within 1 minute
- Fortified biomedical text mining by deploying web crawler
- Distinguished text mining situations using biomedical and multidisciplinary case studies

Internship, Development of Secure Thin Client for ATM *Dec 2014 - May 2015*

- Modified and installed XtratuM Hypervisor on x86 PC
- Developed a Linux USB device driver
- Developed an ATM GUI client using Qt/C++
- Compiled and installed Linux kernel into XtratuM
- Used Makefile, Bash and Perl scripts

Competition Experiences

2013 ACM-ICPC Asia Jakarta Regional Contest *Oct 2013*

- Used Java Programming Language

- Participated representing School of Computer Engineering NTU
- Solved 3 problems (in team)

National Olympiad in Informatics, China *Jul 2010*
- Used Pascal Programming Language
- Solved algorithm problems under Linux environment
- Won Bronze medalist

National Olympiad in Informatics in Provinces, China *Sep 2006 - Nov 2010*
- Studied algorithm and data structure since 13 years old

Coursework Highlights

Programmed parallel all-pair shortest path problem solutions
- MPI-based programs
- Openmp-based programs
- Cuda-based programs (more than 3000 lines of code)
- Profiling and optimization of different parallel programs

Managed an online invigilation software development
- Agile Project development manager
- Multithreaded, asynchronous video server development in Java

Built a robotic system to explore and traverse unknown areas automaticly
- Chief Arduino Engineer/Hardware Leader in a team of eight
- Exploration algorithm & obstacle detection algorithm
- Arduino programming, Motor control, Sensor detection

Implemented MIPS CPU under simulation in Verilog
- Five-stage pipelining
- Hazard detection & data forwarding
- Static branch prediction & out-of-order execution as enhancements

Leadership Activities

Group Project Leader, Undergraduate Coursework *Aug 2012 - Present*
- Team leader of 9 projects (in total 13 projects) for core modules
- Project scheduling and team management

Team Leader, ISC-HPCAC Student Cluster Competition *Oct 2015 - Present*
- Leader of Team NTU III, 5 undergraduate students
- Conducting peer training

Vice President, NTU Dragon & Lion Dance Troupe *Aug 2013 - Jul 2014*
- Top tier club under Cultural Activities Club
- More than 40 active members
- Organizer of nationwide lion dance competition in Singapore

Founder & Leader, ACM-ICPC Asia Jakarta Regional Contest team "FSM" *Oct 2013*
- Self-organized training without supervision

Skills

Programming: C/C++, Perl, CUDA, Java, Python, Shell, Assembly, Verilog, Pascal

Operating Systems: Linux full-time user, Windows

Hardware Platform: Arduino, ARM Cortex development board, FPGA