

YONGMING SHEN

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EDUCATION

- Stony Brook University**, New York, USA August 2013 – Present
Doctor of Philosophy in Computer Science GPA: 4.0/4.0
- South China University of Technology**, Guangzhou, China September 2008 – June 2011
Master of Engineering in Computer Systems Organization
- South China University of Technology**, Guangzhou, China September 2004 – July 2008
Bachelor of Engineering in Computer Science and Technology

RESEARCH EXPERIENCE

- COMPAS Lab, Stony Brook University** December 2013 – Present
Currently working with Prof. Mike Ferdman on research problems related to computer vision accelerator design, graph processing systems, datacenter scale-out workloads, etc. My main project is to design FPGA-based accelerators for Convolutional Neural Networks.
- South China University of Technology** September 2009 – June 2011
Worked with Prof. Qiong Chen on various data mining problems, such as customer behavior prediction, student performance prediction, and link prediction for social networks.

PUBLICATIONS

- Maximizing CNN Accelerator Efficiency Through Resource Partitioning**
Yongming Shen, Michael Ferdman, and Peter Milder, in 44th international symposium on computer architecture (ISCA), 2017.
- Escher: a CNN Accelerator with Flexible Buffering to Minimize Off-chip Transfer**
Yongming Shen, Michael Ferdman, and Peter Milder, in 25th IEEE international symposium on field-programmable custom computing machines (FCCM), 2017.
- Overcoming Resource Underutilization in Spatial CNN Accelerators**
Yongming Shen, Michael Ferdman, and Peter Milder, in 26th international conference on field programmable logic and applications (FPL), 2016.
- Demystifying Cloud Benchmarking**
Tapti Palit, Yongming Shen, and Michael Ferdman, in 2016 IEEE international symposium on performance analysis of systems and software (ISPASS), 2016.
- Architectural Support for Dynamic Linking**
Varun Agrawal, Abhiroop Dabral, Tapti Palit, Yongming Shen, and Michael Ferdman, in 20th international conference on architectural support for programming languages and operating systems (ASPLOS), 2015.
- Temporal Stream Branch Predictor**
Yongming Shen and Michael Ferdman, in JWAC-4: championship branch prediction workshop (in conjunction with ISCA'14), 2014.

RESEARCH PROJECTS

- Argus – use a cluster of FPGAs to accelerate CNNs** 2015 – Present
Develop a high performance and energy efficient Convolutional Neural Network acceleration solution for data center environments, using a cluster of FPGAs.

OTHER PROJECTS

- Musk – a CPU that implements a subset of the x86-64 ISA** 2014
 From scratch, built a 5+ stage pipelined, super-scalar CPU with set-associative caches, with synthesizable System Verilog.
- JOS Hypervisor** 2014
 Extended JOS (an Exokernel operating system) to become a virtual machine hypervisor.
- CBP 2014** 2014
 Built a branch predictor for the Championship Branch Prediction 2014 competition.
- MzOS – a UNIX-like Operating System** 2013
 From scratch, developed an operating system that supports preemptive scheduling, demand paging and DMA-based IO. Also, a file system and a set of user utilities were implemented.
- KDD Cup 2010** 2010
 Led the development of a solution to this data mining competition and won third place among student teams.
- RoboCup China Open 2007** 2007
 Developed a program that enabled virtual humanoid robots to walk. Our team won the second prize in the Simulation 3D league.

WORK EXPERIENCE

- Stony Brook University** August 2013 – Present
 Teaching Assistant / Research Assistant
- NVIDIA Corp.** May 2017 – August 2017
 Deep Learning Architect Intern
- Cavium Inc.** June 2015 – August 2015
 Software Engineering Intern

TEACHING EXPERIENCE

- Stony Brook University** August 2013 – December 2014
Teaching Assistant
 CSE 219 Computer Science III Spring 2014
 CSE 310 Computer Networks Fall 2013
- South China University of Technology** September 2008 – December 2008
Teaching Assistant
 Discrete Mathematics Fall 2008

TECHNICAL SKILLS

- Programming Languages:** C, C++, Java, Python, x86 Assembly, System Verilog, Scala, Bluespec, Chisel.
Tools and Operating Systems: UNIX-like systems, Windows, Git, Subversion, GDB, Vim, Eclipse, Netbeans.