Randy Widialaksono *Computer Systems Engineer*

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Summary

Industry experience in microprocessor design, held roles in ASIC physical design and SoC architecture design. Interests in developing software/hardware systems to improve our capabilities, productivity, and resource allocation. Fields of interest include software development, FPGA prototyping, and efficient machine learning.

Selected Publications/Awards

Architectural Analysis of Deep Learning on Edge Devices. 2019, in pre-print.
Physical Design of a 3D-stacked Heterogeneous Multi-core Processor. IEEE 3D-IC 2016.
Rationale for a 3D Heterogeneous Multi-core Processor. IEEE ICCD 2013.
USA ranked 34th, IEEExtreme 24-hour Programming Competition, 2014. Team of 2.
Best FPGA Implementation at International LSI Design Contest, Japan 2009. Xilinx Award. Team of 3.

Experience

Intel — Austin, Texas

SoC Performance Architect *2017-*
Developed tools, simulator infrastructure to validate and analyze performance of server SoCs. Enabled new workload projections, accelerated workload projections turnaround time (customer what-ifs).

Design Automation Engineer *2016*
Developed and enabled place & route, timing flows for a CPU design and met scheduled tape-in.

Qualcomm Research — San Diego, California

Research Intern *Summer 2013*
Performed mixed-signal circuit design verification and FPGA prototyping.

Education

North Carolina State University — Raleigh, North Carolina

Ph.D. in Computer Engineering *2016*
Dissertation: Three-Dimensional Integration of Heterogeneous Multi-Core Processors.
Developed RTL-GDS2 flow for academic 3D-IC processor tape-outs with IBM/GlobalFoundries/Ziptronix.
Teaching assistant for graduate-level digital design and computer architecture courses.

Software Engineering	Advanced Microarchitecture	ASIC Design	VLSI Systems Design
Computer Networks	Parallel Computer Architecture	ASIC Verification	VLSI System Testing (Duke Univ.)
Memory Systems	Computer Design & Technology	Integrated Circuits Technology & Fabrication	Electronic System Level & Physical Design
Embedded Systems Design	Digital Electronics		

Institut Teknologi Bandung — Indonesia

B.S. in Electrical Engineering *2009*
Thesis: Implemented various machine learning algorithms on a multi-core microcontroller.

Oita University — Japan

Exchange Student, Research & Coursework *2007-2008*
Project: Implemented face tracking on a panning camera using neural networks.

Skills

C++, Python	Python Data Science/ML	Verilog, SystemVerilog	Design Compiler
PyTorch, Tensorflow Lite	Pandas, Jupyter	QuestaSim, VCS	PrimeTime, IC Compiler
SystemC, Tcl, Clojure	Scikit-learn	HTML+CSS, Javascript	Online courses
Platform Architect, Simics	Dash, Streamlit, d3.js	NodeJS, SQLite	Startup Engineering
			Distributed ML with Spark