
Summary

Industry experience in microprocessor design, held roles in ASIC physical design and SoC architecture design. Fields of interest include software development, hardware compilation of neural networks, and efficient ML.

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.
Ranked 34th in USA, IEEEExtreme 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 and enhanced performance architecture tools & simulator infrastructure for analysis and debug of device/server SoCs. Conducted power & performance analysis of server SoCs. Delivered and automated server workload projections for internal/external customers.

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 (graduate-level): Design of Digital Systems, Computer Design & Technology.

Software Engineering

Advanced Microarchitecture

ASIC Design

Electronic System Level Design

Computer Networks

Parallel Computer Architecture

ASIC Verification

Physical Design

Memory Systems

Computer Design & Technology

IC Technology & Fabrication

VLSI Systems Design

Embedded Systems Design

Digital Electronics

Modern Computer Algebra (audit)

VLSI System Testing (Duke Univ.)

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

Software/Systems
C++, **Python** (advanced)
SystemC, Tcl, Clojure
Automation, Vim, CI/CD
Platform Architect, Simics
Performance Modeling

Data Science/ML
PyTorch, Tensorflow Lite
Scikit-learn, Pandas
Model compression
ML on edge devices
Data Visualization

ASIC/VLSI Design
RTL Design, SystemVerilog
Digital chip design tapeout
Web Development
HTML+CSS, Javascript
Node.js, SQLite, d3.js

Online CS Courses
Startup Engineering
Distributed ML with Spark
Machine Learning
Fast AI
Analysis of Algorithms