Eren Dogan

https://edogan.us
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PhD Student in CSE at UCSC — VLSI/EDA & Graph ML — 4+ years of experience in hardware research & programming

EXPERIENCE

PhD Researcher   Advisor: Prof. Matthew Guthaus
UCSC   *September 2022 – Present*

- **GAT-Steiner: Rectilinear Steiner Minimal Tree Prediction Using GNNs**
  - Graph attention network model to predict the RSMT of any degree
  - 99.85% accuracy on the ISPD19 benchmark
  - Only 0.48% wire length increase on suboptimal predictions
  - Accepted to ICCAD 2024 (24% acceptance rate)
- **Router for OpenRAM**
  - Implemented a new supply and signal router for OpenRAM
  - Replaced the old, error-prone, grid-based router
  - Uses Hanan-grid graphs to align pins and wires perfectly
  - Faster, more precise, DRC-safe, and uses less wire

Teaching Assistant
UCSC & Ozyegin University   *September 2019 – Present*

- Assisted the following courses: Introduction to Data Structures and Algorithms (CSE 101), Introduction to Analysis of Algorithms (CSE 102), Computer Programming (CS 101), Digital Systems (EE 203), Computer Architecture (CS 240)

Research Intern   Advisor: Prof. H. Fatih Ugurdag
Ozyegin University   *October 2020 – September 2021*

- **OpenCache**
  - Open-source custom cache generator using OpenRAM's SRAM arrays
  - Outputs synthesizable Verilog file, configuration to run OpenRAM and obtain SRAM arrays
  - Simulates and verifies generated caches
- **Deep Compression for PyTorch Models**
  - Improved the "PyTorch to C generator" of Mr. Hasan Unlu of Tesla
  - Pruning and quantization applied on PyTorch models
  - Decreases memory usage and improves speed with compressed sparse column (CSC) format

EDUCATION

University of California, Santa Cruz   Santa Cruz, CA
PhD in CSE; GPA: 3.86/4.00   *September 2022 – Present*

Ozyegin University   Istanbul, Turkey
BS in CS; GPA: 4.00/4.00   *September 2017 – June 2022*
Honors: Valedictorian, Full-tuition scholarship

PROGRAMMING SKILLS

Languages: Python, C/C++, (System)Verilog, Chisel, Java, JavaScript, SQL, Bash
Tools & Frameworks: Git, Linux, PyTorch, Tensorflow, PyTorch Geometric, Spektral, Amaranth, Makefile

SERVICE

Reviewer: DAC 2025, MLCAD 2024, VLSI-SoC 2024
Member: IEEE