ALAN GUO

Evanston, IL | hoesenguo@gmail.com

EDUCATION

Northwestern University   Evanston, USA
- Doctor of Philosophy in Computer Engineering   Jan. 2024 – Present

Northwestern University   Evanston, USA
- Master of Science in Electrical Engineering   Sep. 2022 – Dec. 2023

University of Shanghai for Science and Technology   Shanghai, China
- Bachelor of Engineering in Electronic Information Engineering   Sep. 2018 – Jun. 2022

EXPERIENCE

ASIC Design and Test Engineer   Jul. 2023 – Present
Fermilab (Fermi National Accelerator Laboratory)   Batavia, USA
- Responsible for testing a taped-out ADC-Readout ASIC chip including writing test routines with Spacely, a toolchain for automatic chip testsuites and performing on-site testing in Fermilab
- Participated in the designs of SPROCKET3 ASIC blocks with Fermilab ASIC Design Group
- Responsible for back-end digital flow for Photonic Transmitter block including RTL, simulation, verification, implementing floorplan and P&R

Research Assistant   Apr. 2023 – Present
Northwestern University (Seda Ogrenci Lab)   Evanston, USA
- Research on protection methods for bit-flips induced by radiations for neural network hardware accelerators
- Using Cadence EDA tools for synthesizing, verifying, floorplanning, and P&R for various blocks and designs
- Familiar with WOLF, an environment manager script for back-end digital design designed by Ogrenci Lab

Hardware Test Engineer   Jul. 2021 – Aug. 2021
Shanghai STEP Electric Corporation   Shanghai, China
- Tested various data against the diagrams of circuit boards and provided suggestions for the R&D department
- Designed schematic diagrams, conducted PCB reviews and component changes, and assisted in handling production and after-sales quality issues for future works

Software Development   Jul. 2020 – Aug. 2020
COMAC Software Co., Ltd. from Commercial Aircraft Corporation of China   Chengdu, China
- Participated in the development of a company interview system in Java, solved permissions problems, and questioned banks accessing

RESEARCH

Bitwise Susceptibility Ranking for Edge Neural Networks   Jun. 2023 – Nov. 2024
- Develop python algorithms for ranking weights in ASIC based on-edge neural networks for radiation induced environments like LHC in CERN
- Integrate the algorithms with ASIC related hardware and go through back-end digital flow, ready for tape-out

Manned Beach Car Based on STM32 with Self-designed Drive Board   Mar. 2021 – Jun. 2022
Shanghai University Student Innovation and Entrepreneurship Project, Team Leader
- Design and solder H-bridge PCB circuit, use embedded C in Keil to program the STM32 MCU
- Combine STM32 with a self-designed DC brush drive board and a high-power motor to assemble the vehicle

ADDITIONAL

Skills: Cadence IC Design Tools (Genus, Innovus, Virtuoso, Spectre, Xcelium), Verilog, System Verilog, UVM, Machine Learning, Python, Embedded C (Microchip Studio, Arduino, Keil), MATLAB, LabVIEW, PCB Design (Eagle, Fusion 360, KiCad), Web Design (AWS Server, HTML, JavaScript, CSS)

Languages: English, Mandarin, Shanghainese

Hobbies: Violin (in Northwestern University Philharmonia)