Leo Ling

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Education

Northwestern University, Evanston, IL — June 2022
Bachelor of Science in Electrical Engineering cum laude | Minor in Material Science

Northwestern University, Evanston, IL — June 2022
Master of Science in Electrical Engineering | BS/MS Program
- Sodium-Doped Titania Self-Rectifying Memristors for Crossbar Array Neuromorphic Architectures (2021)
- Linear and Symmetric Li-Based Composite Memristors for Efficient Supervised Learning (2022)

Select Coursework: Applied EM and Photonics, Fund. of Signals & Systems, Electronic System Design

Professional Experience

Intel — Hillsboro, OR
Signal Integrity Engineer — June 2021 - December 2021, July 2022-Present
- Measured and modeled high speed digital interfaces (PCIe, ENET) using various test equipment to debug and evaluate signal integrity performance on a system level including PCB and package layout
- Developed MATLAB and python automation for test equipment (VNA, oscilloscope, BERT, etc.) and post-processing to analyze the impact of common impairments (noise, skew, crosstalk, etc.) on high-speed interfaces
- Created methodology for optimizing transceiver equalization (CTLE, FFE, etc.) in the lab leading to significant time savings compared to previous brute force approaches on ENET systems
- Developed scripting around HFSS's python API to automatically generate PCB and package via layouts for signal integrity analysis and optimization
- Maintained and updated MATLAB-based system level modeling tool for next generation PCIe platforms and interfaces- including DSP modeling of PHY equalization features
- Adapted machine learning workflows for signal integrity needs by generating behavioral models from HSPICE silicon model using MATLAB

Project Experience

Northwestern University — Evanston, IL
Student Researcher — October 2018- June 2022
- Created custom hardware measurement setup to characterize high impedance electronics using pattern generators, digital multimeters, and low noise amplifiers in coordination with Sandia National Labs
- Designed python GUI to automate collection of IV and CV behavior of electronic devices using lab instruments
- Modeled performance of fabricated memristor arrays on machine learning benchmarks

NUSolar — Evanston, IL
Software Lead — December 2018- June 2021
- Programmed and setup I2C, SPI, and CAN communication between multiple custom components using C/C++
- Lead and taught programming workshops to new and perspective members about GIT, Python, CAN, and various commonly used technologies
- Fabricated custom surface mounted Arduino shield PCBs to interface with 24V CAN bus

Skills

Programming	MATLAB, Python (Scikit-RF, matplotlib, numpy, pytorch), C/C++, TS/JS, GIT, Linux
Electronics	Cadence Virtuoso, PathWave ADS, Ansys AEDT (HFSS), HSPICE, Verilog-A, EAGLE, HSPICE
Laboratory	Oscilloscope (real time & sampling), TDR, VNA, BERT, PPG, Spectrum Analyzer