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: Quantum Semiconductors, Applied EM and Photonics, Solid State Elec. Devices, CMOS VLSI

Professional Experience

Intel   Hillsboro, OR
Signal Integrity Engineer   July 2022-Present
- Measured high-speed channels (PCIe, Ethernet, DRR) using TDR and VNA to root-cause signal integrity issues; including on-package RF probing up to 67 GHz
- Developed python automation for lab measurement instruments such as oscilloscopes, VNAs, and BERTs as well as post-processing of collected data using MATLAB and Python
- Created methodology for optimizing transceiver equalization in the lab leading to significant time savings compared to previous brute force approaches and published findings in an internal journal
- Migrated a MATLAB PCB transmission line modeling application into a cloud hosted Python web application
- Adapted machine learning workflows for signal integrity needs to generate behavioral TX driver models from silicon netlists using MATLAB

Project Experience

Northwestern University   Evanston, IL
Student Researcher   October 2018- June 2022
- Created custom hardware measurement setup to characterize extremely high impedance memristor devices 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
- Devised image processing tool using MATLAB to accelerate measurement of atomic force microscopy samples
- Developed Python simulations of memristor crossbar array based neural networks to inform material selection

NUSolar   Evanston, IL
Software Lead   December 2018- June 2021
- Programmed and setup 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),Typescript, Javascript, C/C++, GIT
Electronics	Soldering, PathWave ADS, Ansys AEDT (HFSS), HSPICE, Verilog-A, EAGLE, HSPICE
Laboratory	Oscilloscope, Logic Analyzer, Spectrum Analyzer, TDR, VNA, RF Probing