Jinwei (David) Li

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PROFESSIONAL SUMMARY

Engineering undergraduate, having working experience in RF and signal-chain design, power electronics, and micro/nanofabrication course work. Experienced in circuit simulation, PCB design, and laboratory-based verification with Python-based measurements. Interested in interdisciplinary studies in AI, robotics, signal processing and advanced devices/materials in high-efficiency sensing and embedded systems.

EDUCATION

2020-present Bachelor of Applied Science in Electrical Engineering (EE) Candidate, Faculty of Applied Science and Engineering, University of Toronto, Toronto ON.

RELEVANT COURSEWORK

- Analog Integrated Circuits; Electronic Devices and Circuits; VLSI Technology and Design.
- Quantum & Semiconductor Physics; Micro- and Nano-Fabrication (lithography, etching, thin films)
- Signals & Embedded Systems; RF Front-End Design
- Power Electronics; Renewable Energy Systems; Control Systems

TECHNICAL SKILLS

- Programming & Data: Python, MATLAB/Simulink, basic C/C++
- EDA & Simulation: Multisim, LTspice, Synopsys Sentaurus TCAD
- PCB/Layout: Altium Designer, schematic capture, layout, Cadence Virtuoso
- Lab & Test: Oscilloscope, spectrum analyzer, signal generator, power supplies, soldering/rework.
- Fabrication: photolithography, design concepts deposition/etch, SEM/TEM working principles.

CLASSES and PRESENTATIONS

2022	Circuit Analysis — Resistive, Dynamic Circuit Analysis Exercise Class (习题课)
2023	Electronics — Diode, Mosfet large signal Analysis Exercise Class (习题课)
2023	SDR Radio Receiver Subsystem — Project Presentation and Technical Report.

2023   Analog Electronics — Small signal Analysis Exercise Class (习题课)
2024   Digital Electronics — Delay and Mismatch Exercise Class (习题课)
2025   GaN-Based Solar Converter with MPPT — Capstone Presentation and Demonstration.

SELECTED ENGINEERING PROJECTS

Software Defined Radio (SDR) Receiver Subsystem

- Designed and tested receiver chain such as filtering, limiting, amplification, mixing, and down conversion of a flexible RF transceiver.
- Sidestepped out-of-band interference and steady downconverter output by calculation and simulation validation of component selections used.
- Designed and implemented lab tests; wrote Python scripts to measure and compare performance with reference design.
- Designed schematics, PCB layout, and documentation with Altium; provided a functional prototype with better performance parameters.

GaN-Based Solar Power Converter with MPPT (Capstone)

- Designed a highly-efficient GaN DC-DC converter to be used in solar systems with the Maximum Power Point Tracking (MPPT) to stabilize power output at varying irradiance and temperature levels.
- Simulated converter behavior, choice of switching devices, and optimization of efficiency/thermal performance to realistic charging output.
- Worked on system architecture design and test plan; wrote final technical report and presentation.

Device Modeling and IC Layout (Course & Lab Work)

- Simulated semiconductor device behavior with Sentaurus TCAD and related circuit behavior with device-level results.
- Modeled and tested analog building blocks in Cadence Virtuoso.

LEADERSHIP & COLLABORATION

2022-2025   ECE Ambassador, directly represented the faculty at outreach events and university conferences.
2023-2025   Peer Mentor/Tutor, engaged in course development and teaching.

- Lead/contacts on multi-person engineering teams; organized design milestones, task allocation and technical review.
- Solved problems involving multiple simulations to re-engineer designs, prototyping, and debugging designs through measurements.

References available upon request.