Nick Cardamone

https://github.com/ncardamone10 cardamonen.ca

EDUCATION

Masters of Applied Science, Electrical and Computer Engineering

Ottawa Canada Sept 2023 - Present

Mobile: 613-539-1381

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Thesis: Transmission Line Autorouter using Shape Synthesis with Dr. McNamara and Dr. Acimovic Specialization: Electromagnetics, CEM, Microwave and RF Design

Courses: Phase Locked Loops and RX Synchronizers, Nonlinear Microwave Devices and Modeling, Signal and Power Integrity in High-Speed Designs, Antenna Engineering, Method of Moments

Ottawa, Canada

Sept 2018 - April 2023

Bachelor of Applied Science, Electrical Engineering

University of Ottawa; Magna Cum Laude

Courses: Microwave Circuits, Antennas, Electronics Design, Modern Controls and Signal Processing, Wireless and Optical Communication Systems, Embedded Systems and Scripting

SKILLS SUMMARY

University of Ottawa

- Electronics: PCB and Circuit Design, Automated Testing, Test Equipment Expertise
- Embedded Systems: ARM, STM32, FPGA (Lattice, Xilinx, Altera), Embedded Linux (PetaLinux), RTOS
- Programming: C/C++, Python, MATLAB, VHDL, Rust, LaTeX, Git, Bash
- Software: Altium Designer, APD, AWR Microwave Office, HFSS, Fusion 360, SPICE

EXPERIENCE

Skyworks Ottawa, ON

RFIC Design COOP

- RF Testing: Validated power amplifier IC prototypes and managed automated test benches.
- **RF Simulation**: Used HFSS and ADS to analyze amplifier and package performance.
- **Design**: Designed harmonic filters for MCM substrates in APD and HFSS using a PyAEDT scripting approach.
- Troubleshooting: Debugged automated test software to support tapeout deadlines.
- IC Rework: Performed soldering and rework on packages using GaAs, SOI dies and 01005 components.

University of Ottawa

Ottawa, ON

Sept 2024 - Present

Teaching Assistant

Sept 2023 - April 2024

- Lab Instruction: Taught Circuit Theory 1 labs covering soldering, AC/DC circuits, and lab instrumentation.
- Tutorials: Delivered weekly sessions on circuit analysis techniques.
- **Project Management**: Guided student projects, ensuring structured development and progress.

Arkalumen Sr Hardware Design COOP

Ottawa, ON Jan 2021 - April 2023

- PCB Design: Developed and tested IoT lighting control systems, including DC-DC converters.
- Firmware: Implemented embedded software on nRF52, MSP430, and PIC microcontrollers.
- **Fabrication**: Produced PCB layouts, BOMs, and prototypes for manufacturing.

Sino-can Energy

Tweed, ON

COOP Student May 2020 - Aug 2020

- **Design**: Developed electronics hardware for an autonomous greenhouse.
- Fabrication: Constructed greenhouse structures using 6061 aluminum.
- Installation: Installed PV solar systems at multiple locations in Canada.

Projects

- USB-C Galvanic Isolator: Designed a USB 3.2 isolator with 100W power isolation and 20 Gb/s data throughput.
- Microwave Power Amplifier: Designed a 3 GHz Class A RF amplifier for S-parameter optimization.
- Patch Antenna Array: Designed a 5 GHz microstrip antenna array and characterized it in an anechoic chamber.
- Neural Network Buck Converter: Developed an NN-based controller in Simulink to regulate DC-DC power conversion.
- Reconfigurable FPGA-Based Filter: Designed an FPGA-based programmable filter for use in a PLL.
- Python Instrument Drivers: Developing automated test instrument control drivers using SCPI, PvVISA and ChatGPT.

Hobbies and Interests

- Electronics: Prototyping circuits, RF systems, and power electronics.
- 3D Printing: Building enclosures and mechanical parts for electronics projects.
- Music: 10+ years playing drums and piano in jazz and concert bands.