

Dino Mastropietro

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Education

University of Michigan, Ann Arbor, MI

Master of Science in Engineering - Electrical and Computer Engineering: Embedded Systems Apr. 2022
Bachelor of Science in Engineering - Magna Cum Laude: Computer Engineering (Minors: Math & Physics) Apr. 2021

Work Experience

Sonatus Inc, Sunnyvale, CA

Senior Software Engineer: Advanced Development Team, Office of the CTO Aug. 2024 - Present

- I lead cross-functional teams across product, marketing and the Office of the CTO to quickly deliver innovative solutions, assess projects' feasibility, and architect solutions for a wide range of internal/external products (eg: multi-agent systems & AI/ML edge deployment infrastructure models)

Member of Technical Staff: Embedded Software Engineer Jul. 2022 - Aug. 2024

- Led design and implementation of a scalable, over-the-air Linux AB update agent and worked cross-functionally with cloud and product teams to deliver a new vertical product offering for customers
→ I was forward deployed at [CES 2024](#) to help announce our product and be a technical authority
- Retooled 90% of our code base from a CMake system to Bazel, decreasing average build times by ~33%
- Developed firmware in C and built board support packages using Yocto for automotive SoCs related to power and safety; I leveraged HW accelerators to increase fault-monitoring and visibility by 112 unique signals and reduced boot time by 5x

University of Michigan, Ann Arbor, MI - Graduate Student Instructor: Computer Architecture Jan. - Apr. 2022

- Instructed this senior-level capstone design/project course where I led weekly lectures, individualized office-hours support and managed student teams' design & development of out-of-order CPUs

EMAG Technologies, Ann Arbor, MI - Embedded Software Engineer Sept. 2021 - Jan. 2022

- Designed and implemented embedded C/C++ software for a hierarchical control network of 30+ MCUs and 2,800+ software-defined antennas, enabling precision imaging for a LEO satellite phase-array system

White Fox Scooters, Jersey City, NJ - Embedded Engineering Intern Jun. - Sept. 2021

- Led development of an automatic, IoT-enabled, docking and charging mechanism that, as a PoC, increased data visibility and saw a 16% decrease in docking failure rates, enhancing our product's useability

Tru Manufacturing Machine Shop, Norwood, NJ - Intern May 2018

- Collaborated with machinists and mechanical engineers to design high-volume manufacturing processes
- Operated both manual and CNC lathes and mills to manufacture high-volume, specialized parts for clients

New York City Parks Department, Brooklyn, NY - Lifeguard: Coney Island & Brighton Beach Summer 2015 & 2016

Research Experience

University of Michigan, Ann Arbor, MI - Research Assistant: Lurie Nanofabrication Facility Jan. 2019 - Apr. 2021

- Developed quantum-optical simulations to design photonic crystal structures that select robust entangled photons by increasing temporal proximity and chirality when exciting a semiconducting quantum dot
- Realized those designs using classic lithography methods (etching and optical) which I then experimentally verified using number-resolving photon detectors, achieved > 50% generation efficiency (see publication)

Publications:

Juhyeon Kim, Donato Mastropietro, Duncan Steel, Jung-Tsung Shen, and Pei-Cheng Ku, "Proposal for chip-scale generation and verification of photonic dimers", Appl. Phys. Lett. 119, 224001 (2021) <https://doi.org/10.1063/5.0073090>

Additional

Projects: (Relevant things I find fun)

- Electric vehicle conversion of 1981 Honda CB750 [🔗](#)
- Digital guitar pedal: real-time onset-detection via HW accelerated FFT and translation [🔗](#)

Languages: Python, C++, Rust, C, Verilog

Embedded Devices: STM-32 (ARM A53/M4/M7), NXP S32G2, RaspberryPi, Arduino, FreeRTOS, UBoot, RHELlinux

Build & DevOps: Bazel, CMake, Yocto, Jenkins, GitHub