Shreyas Donti

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EDUCATION

University of Massachusetts Amherst | *GPA: 3.82* *Sep 2023 - May 2027*
Bachelors of Sciences in Computer Science & Electrical Engineering (w/ Honors) Amherst, MA

- **Honors** : Chancellor's Award ($16,000/yr), Dean's List (4x)
- **Relevant Coursework:** Data Structures & Algorithms, Operating Systems, Computer Networks, Embedded Systems, Robotics, Signals & Systems, Circuits & Electronics, Probability & Statistics, Discrete Math

EXPERIENCES

Research Intern *June 2025 - Present*
Wireless & Sensors Systems Labratory Amherst, MA

- Designing custom PCBs in Altium Designer for a wearable wind-powered sensing system, optimizing for low power, compact form factor, and sensor integration.
- Leading end-to-end design and firmware implementation of a high-precision sensor system on the ADICUP3029 (ARMv5) using C and SPI; acheiving 99.5% impedance accuracy.
- Designing an energy-harvesting system for a small wind turbine using a buck-boost controller and LDOs to maintain voltage between 2.2V - 3.5V across circuit
- Investigating and evaluating LoRa communication modules to design a long-range wireless system.

Undergraduate Course Assistant – CS 230: Computer Systems Principles *Jan 2025 - Present*
Manning College of Information & Computer Sciences Amherst, MA

- Teach core systems programming concepts including C, x86 assembly, CPU architecture, virtual memory, threading, and networking to 60+ students.
- Lead two weekly lab sessions; assist with debugging, systems design, and conceptual understanding.
- Grade 50+ assignments weekly and provide feedback to support student learning and performance.

Technology Team Organizer *April 2024 - Present*
HackUMass XII & XIII Amherst, MA

- Collaborated with a 20-member team to design and build the HackUMass XII website using React.js, HTML, CSS, and Figma for UI/UX prototyping, managing workflow and contributions through Git.
- Delivered ~10 bug fixes and performance improvements that enhanced site functionality, boosting user registration by 15% and increasing sponsorship funding by 6%.

Undergraduate Research Volunteer *May 2024 - August 2024*
Manning College of Informatics & Computer Sciences Remote

- Collaborated with two peers under a Ph.D. mentor to develop a 1-D Convolutional Neural Network with PyTorch for recognizing using gyroscope and accelerometer IMU data from wearable and smartphone devices with 92.5% accuracy.
- Applied a low-pass Butterworth filter using SciPy and Pandas to extract 280+ time and frequency-domain features from raw data, improving model performance by 18%.
- Presented findings to 100+ attendees with visualizations using Matplotlib and Seaborn.

PROJECTS

Xenon Engine - 2D Game Engine in C++ | *C++, OpenGL, SDL, Git* *github.com/stelleron/xenon*

- Built a lightweight 2D game engine from scratch in C++, handling window/input management, audio, and multithreading.
- Designed a high-performance batch renderer capable of efficiently rendering 60,000+ objects per frame at maximum FPS.

ResumeGen - Resume Generator App | *Svelte, Node.js, Express, PostgreSQL* *github.com/stelleron/resume-builder-app*

- Designed a full-stack application using a Svelte + Typescript frontend and an Express.js backend to build resumes quickly.
- Utilized PostgreSQL & Prisma ORM for persistent storage; using Passport.js to handle secure user authentication.
- Used Docker Compose to build a multi-container application for project deployment.

CHIP-8 Emulator | *Rust, SDL, Assembly, Computer Architecture* *github.com/stelleron/rust-emulator*

- Developed a CHIP-8 emulator in Rust leveraging SDL2 for rendering and keyboard input.
- Implemented instruction set decoding, memory/register management, stack operations, and accurate CPU cycle emulation.

SKILLS

- **Programming Languages:** C, C++, Go, Python, JavaScript, TypeScript, Bash, SQL, HTML/CSS, Assembly, Verilog
- **Frameworks:** React.js, Django, Svelte, Express.js, Matplotlib, SciPy, NumPy, PyTorch, Seaborn, OpenGL3, SDL, GLFW
- **Tools:** VSCode, Neovim, Git, Make, Premake, REST, Docker, Vite, SvelteKit, Slack, Linux, Figma, Node.js, Prisma, SQLite, PostgreSQL, MATLAB, Arduino Uno, Arduino IDE, KiCad, Altium Designer, LTspice, Vivado, Vitis