Dennis Lustre

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Education

University of California, Irvine September 2020 - June 2024
Bachelor of Science in Computer Science *Irvine, CA*

- **GPA**: 3.63/4.0 (8x Dean's List)
- **Leadership & Involvement**: ICS Student Council Projects Committee, FUSION Mentor
- **Courses**: Computer Vision, Artificial Intelligence, System Design, Data Structures & Algorithms

Experience

Machine Learning Engineer May 2024 - Present
Boundary Remote Sensing Systems *Remote*

- Greenfielding an ML pipeline to generate reports with data visualizations tailored to geospatial data, utilizing **CUDA** and **HuggingFace Transformers** for inference.
- Improved Microsoft LIDA's optimization capabilities by making an open-source contribution enabling 4-bit quantization for LLMs running locally.

Software Developer November 2023 - Present
ICS Student Council - ZotMeal *Irvine, CA*

- Led front-end development by designing **Figma** mockups, creating mobile and web-responsive UI components with **React Native**, and integrating with the back-end using **tRPC**.
- Sped up back-end cron services by 50% by parallelizing async operations for **AWS Lambda** serverless functions.
- Slashed setup and teardown times for PostgreSQL integration tests by 30% by adopting **Testcontainers** to simplify database test suites in **Vitest**.

Software Engineer Intern July 2023 - July 2024
Thaddeus Resource Center *Remote*

- Led the full lifecycle of a Next.js web app, achieving a 78% reduction in infra costs.
- Managed a team of 6 web developers and accelerated development by building a CI/CD pipeline that automates tests, builds, and deployments for staging and production using **GitHub Actions**.
- Boosted organizational efficiency by developing comprehensive internal systems, including an admin dashboard for staff management and a blog system, streamlining operations.
- Accelerated CI execution times by 50% by parallelizing **Jest** and **Playwright** E2E test suites.

Projects

Gesture-Controlled Robot Arm | *C++, Arduino* | GitHub

- Led development of embedded systems software within a cross-functional team of 11 engineers for a gesture-controlled robot arm using **Arduino** microcontrollers, Bluetooth modules, and flex sensors.
- Achieved 1st place and won 2 additional awards at FUSIONCon: **Sponsor's Choice** and **Most Innovative Design**.

Audio Distortion VST Plugin | *C++* | GitHub

- Developed a standalone audio plugin by utilizing JUCE and performing in-DAW testing with FL Studio.
- Implemented 3 audio distortion algorithms and a GUI with an output meter and input knobs.

NASA Radiation Microscopy Generative AI Model | *Python, PyTorch Lightning* | GitHub

- Furthered research on the effects of cosmic radiation on astronauts by developing a Generative Adversarial Network to augment NASA's BPS microscopy dataset, generating synthetic images that mimic irradiated cells.
- Classified images with 93% accuracy on a large subset of the domain by leveraging ResNet101.

Geospatial Web Game | *TypeScript, Python, Next.js, Tailwind CSS* | GitHub

- Developed a browser game in 24 hours that utilizes a reverse geocoder API to generate geospatial clues for players to guess Orange County cities.
- Won 2 awards at Data@UCI's Atlantis Datathon: **People's Choice** and **Best Use of Melissa Data API**.
- Managed development and deployment of the app with **Next.js** and **Vercel**.

Technical Skills

Programming Languages: C, C++, C#, Python, JavaScript, Golang, Rust, Java, SQL, HTML, CSS
Tech: React.js, Node.js, ASP.NET, MySQL, Postman, Docker, AWS, Azure, Vercel, NoSQL, CUDA, NumPy, pandas
Other: Linux (Ubuntu), Visual Studio, Bash Shell Scripting, Powershell, GitLab, Agile, Scrum, Jira (Kanban), SDLC