David Benshachar

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Experience

Machine Learning Engineer Intern Jul 2024 – Aug 2025
Gradient | *Python, PyTorch, OpenCV* *Seattle, WA*

- Built a line-detection + model-based cropping pipeline with **0.98 IoU** and **∼1s** inference to reduce GPU resource-strain from more intensive segmentation models.
- Developed algorithms using homography and OpenCV to generate 1M+ synthetic images for training classification models, achieving **less than 1.5-pixel** error **97%** of the time.
- Wrote **100+** unit tests to ensure API multi-threading safety and correct load-balancing for AI models across multiple GPUs and cores.
- Fine-tuned YOLOv10 classification model to identify lighting issues, achieving **97% accuracy** to ensure proper lighting conditions before deploying more advanced AI models.

Software Engineer Intern Jan 2024 – Jul 2024
Seagull Scientific | *C#, REST APIs, .NET, Cloud* *Seattle, WA*

- Wrote program capable of robustly handling **100+ files simultaneously** for stress testing of Cloud upload and download features.
- Developed C# shell using REST APIs to enable more precise upload and downloads that supported UNIX commands.
- Designed UI in C# to allow user friendly file upload deletion, and wild card uploads as alternative to using script.

Firmware Engineer Intern Sep 2023 – Jan 2024
Meteorcomm | *Python, Data Analysis, Embedded Systems* *Seattle, WA*

- Tested for irregularities in company radios by using SSH sessions and graphed detected noise across **176 channels** for various signal strengths.
- Identified two channel groups exhibiting noise levels over **30 dBm higher** than the average, indicating a **1,000 times increase in signal power** relative to other channels.

Projects

Gmail RAG – github.com/dbenshachar/mail-rag | *Golang, MongoDB, RAG* Oct 2025 – Present

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Mini OS – github.com/dbenshachar/mini-os | *C, Assembly, Embedded Systems, Operating Systems* Oct 2025 – Present

- Created boot-able 32-bit operating system image from scratch in C and Assembly.
- Wrote custom kernel and shell to interface with hardware supporting basic UNIX commands and I/O management.
- Designed and developed file and folder system with ability to write and read from disk with persistent storage.

FRC LLM – github.com/dbenshachar/frc-gpt | *PyTorch, MCP Server, Web Scraping* Apr 2025 - May 2025

- Scraped **8k+** GitHub repositories for **1M+** lines of code to create a dataset for a Large Language model for the FIRST Robotics Competition.
- Trained an **LLM (Llama 3.2, 1B parameters)** in PyTorch to auto-complete and assist coding for robotics.
- Deployed the model in VS Code with an integrated MCP server using Ollama for local execution.

Education

California Polytechnic State University – San Luis Obispo Sep 2025 – Jun 2028
Bachelor of Science in Computer Science *San Luis Obispo, CA*

- **Relevant Coursework by June 2026**: Data Structures, Intro to Database Systems, Discrete Structures, Object-Oriented Design, Intro to Computer Organization, Linear Algebra
- **GPA**: 3.94/4.0

Skills

Programming Languages: Python, C, C++, C#, Java, TypeScript, JavaScript
Frameworks and Libraries: PyTorch, TensorFlow, GitHub, Docker, AWS Lambda
Frontend: React Native, HTML, CSS, TailwindCSS, Node.js
Backend: MongoDB, SQL, PostgreSQL
Interests: Full-Stack Development, Computer Vision, Embedded Systems