

Darsh Thakkar

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Experience

AI & Software Engineer Intern | LexLegis AI | Mumbai, India

May –
July 2025

- Developed a fully offline AI legal assistant with chat, OCR, document analysis, multilingual translation, and semantic search, ensuring complete data privacy.
- Built cross-platform solutions in C++, Python, and QML, integrating LLMs via llama.cpp and Llama Server for fast, local inference.
- Managed document indexing, retrieval (RAG + BM25), and intuitive interaction across Windows, macOS, and Linux.

Software Development Internship | Yodaplus | Mumbai, India

June –
Aug 2024

- Tested the AI software of GenRPT for bugs and provided solutions to the backend team by reviewing SQL queries. Utilized Pandas to create code for data cleaning and ensured data quality.
- Used Python, APIs, PostgreSQL, and ReactJS to develop a Library Management System.

Projects

YouTube Gesture Remote

- Developed a real-time, offline, webcam-based gesture controller for YouTube.
- Implemented hand pose recognition to control playback (play/pause, volume, fullscreen, navigation).
- Built cross-platform functionality with on-device processing and an on-screen HUD.

Reinforcement Learning Agent (Q-Learning & SARSA)

- Implemented Q-Learning with ϵ -greedy exploration and extended with SARSA + decaying ϵ .
- Trained and evaluated in CliffWalking-v0, visualizing policies and returns.
- Compared on-policy vs off-policy learning, achieving near-optimal navigation.

Predicting Climate Trends with Linear Regression

- Analyzed ice coverage data from Lake Mendota (1855–2023).
- Built closed-form and gradient-descent regression models to forecast frozen-day counts.
- Tuned hyperparameters, plotted loss curves, and identified model limitations.

LeNet-5 CNN for Image Classification

- Recreated LeNet-5 in PyTorch and trained on CIFAR-100.
- Counted parameters, benchmarked validation accuracy, and tested hyperparameter variations.
- Experimented with custom CNN architectures for scene recognition.

Education

University of Wisconsin-Madison | Madison, WI

2023 - 2027

Bachelor of Science: Computer Science and Data Science

- Languages: English, Hindi, Gujarati, Spanish (basics)
- Dean's List in Fall 2023, Fall 2024
- GPA: 3.5

Skills

Programming Languages: Python, C++, Java, JavaScript, SQL

AI/ML & Computer Vision: PyTorch, TorchVision, scikit-learn, OpenCV, MediaPipe, CNNs (LeNet-5), Reinforcement Learning (Q-Learning, SARSA), Gymnasium, Time Series Modeling, Matplotlib

LLMs & Retrieval: llama.cpp, Llama Server, RAG, Embeddings, BM25, Tesseract OCR, GGUF

Frameworks & Systems: Qt/QML, ReactJS, REST APIs, FFmpeg, CMake, Git

Data & Databases: Pandas, NumPy, PostgreSQL, SQLite

Certifications

Supervised Machine Learning: Regression and Classification, authorized by DeepLearning.AI and Stanford University