Kedar Sathe

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Summary

- I am a Computer Engineering student passionate about Machine Learning, AI, and robotics. I solve real-world challenges with innovative coding and research, and I actively contribute to open source projects.

Experience

- **Machine Learning Engineer** Nov '23 – Present
  Freelance, Pune
  - Engineered and deployed comprehensive AI/ML solutions across 12+ projects, addressing complex challenges with diverse tech stacks.
  - **Tech Stack:** Python, PyTorch, Scikit-learn, Keras, CNN, RNN, NLP, Image & Audio Processing.

Projects

- **LocalRaG** (RAG Application) Github
  Stack: Python, Streamlit, Docker, LangChain, PostgreSQL, PgVector
  - Developed a Retrieval-Augmented Generation system integrating Llama 3 70B with a local Postgres database for efficient knowledge extraction.
  - Created an intuitive Streamlit interface and containerized the solution using Docker.
- **Snake's & The Golden Apple** (AI Snake Game) Github
  Stack: Python, Deep Q-Learning, Pygame
  - Built a competitive AI Snake game using Deep Q-Learning. Designed an 11-parameter state capturing danger zones (straight, right, left), current direction, and apple position.
  - Defined a discrete action set (straight, right, left) with a reward system (+15 for apple, +0.5 for approaching food, -10 for collisions, -0.3 for proximity penalties) and trained the model using experience replay and an epsilon-greedy strategy.
- **Rex** (AI Line-Following Robot) Blog
  Stack: Arduino, Fusion360, AI
  - Developed a 3D-printed, sensor-integrated robot that follows lines using the Left-Hand Rule.
  - Integrated PID control and heuristic algorithms on Arduino to achieve smooth pathfinding.
- **FREELIX** (Voice Translation) Site
  Stack: React, Tailwind, OpenAI, HuggingFace
  - Constructed a real-time voice transcription and translation platform supporting 30+ languages.
  - Designed a responsive interface with React.js and Tailwind CSS; deployed seamlessly on Netlify.
- **Alzymer** (Alzheimer Detection) Github
  Stack: Python, R, Scikit-learn
  - Implemented an SVM-based Alzheimer's detection model achieving 98% (Python) and 99% (R) accuracy using MRI analysis.
  - Developed an interactive webpage for real-time MRI classification.

Education

- **Bachelor of Technology in Computer Engineering** 2026
  Vishwakarma Institute of Technology, Pune GPA: 7.8
- **Higher Secondary Education (Science)** 2022
  SB College of Science, Sambhajinagar (Aurangabad)

Skills

- **Programming & Scripting:** Python, R, C++, SQL
- **ML & Data Science:** PyTorch, Keras, Scikit-learn, HuggingFace Transformers; Techniques: Regression, Classification, Clustering, Dimensionality Reduction, Model Evaluation & Training, LLM Fine-tuning & Deployment, Generative AI, Computer Vision; Libraries: Pandas, NumPy, Seaborn, Matplotlib
- **AI Algorithms:** CNN, RNN, LSTM, Transformers, GANs, Reinforcement Learning (DQN, Policy Gradient, Actor-Critic), Graph NN, Autoencoders, Attention Mechanisms
- **Tools & Platforms:** Docker, Kubernetes, Kafka, Nginx, Git, GitHub, Google Cloud

Certifications

- Eyantra 2023 (IIT Bombay):Ranked AIR 1 in Stage 1 and top 10 globally in Stage 2.
- Certification in NLP and Deep Learning:By DEEPLEARNING.AI.
- Fundamentals of Deep Learning Certification:By NVIDIA.
- Cybersecurity Workshop Certification:By Unstop.