Abhay Shinde

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EDUCATION

MCC, University of Mumbai   Mumbai, India
Bsc in Information Technology :- CGPA - 9.0   *2022 – 2025*

Mulund College of Commerce   Mumbai, India
High School (HSC) :- 86 percentage | Maths - 97/100   *2020 – 2022*

PROJECTS

PainBrushAI | *Python, Tensorflow, Streamlit, Huggingface*   [Deployed link]
- Developed an AI tool using Google's Neural Style Transfer model to blend content and style images
- Built and deployed a real-time Streamlit app with intuitive UI for stylized image generation
- Hosted the project on **Hugging Face Spaces**, making it publicly accessible
- Processed 50+ image pairs with ¡1s GPU inference time and high-resolution outputs

GeoRoadExtract | *Python, Pytorch, matplotlib*, Pillow   [Deployed Link]
- Built a **U-Net** model from scratch for road extraction with high pixel-level accuracy
- Improved generalization using **dropout layers** and data augmentation techniques
- Achieved $\widetilde{92\%}$ **IoU** (Intersection over union) on validation set using 1,000+ labeled satellite image-mask pairs
- Used Pillow and matplotlib libraries for preprocessing and refining segmentation outputs

BumpVision | *Python, Tensorflow.js, Ultralytics, Javascript*   [Deployed Link]
- Fine-tuned a custom YOLOv5 model on a self-curated dataset of 500+ Indian speed breaker images, achieving 92 percent accuracy
- Converted model to **TensorFlow.js** for real-time browser-based inference on images, webcam, and videos
- Developed an interactive React.js web app with Yarn, HTML, CSS, and JavaScript, enabling live object detection directly in the browser
- Hosted the app on **GitHub Pages**, delivering zero-server latency and instant speed breaker detection in-browser

PongEnv | *Python, Pytorch, AWS*   [Deployed Link]
- Developed a custom RL environment from scratch for Pong, integrating with OpenAI Gym for training agents
- Implemented **Deep Q-Network** (DQN) to train the agent to play Pong, achieving human-level performance after 300k episodes
- Trained the model on AWS with NVIDIA T4 GPU, optimizing training time and resources
- Achieved real-time performance, enabling the agent to play Pong with a level of proficiency comparable to human players

EXPERIENCE

Techathon   February 2025
Gemini API, FastAPI, React, TailwindCSS
- Collaborated in a team of 4 to develop a web application that verifies the authenticity of news articles using the Gemini API
- Built the frontend using React.js and Tailwind CSS, ensuring a responsive and user-friendly interface
- Led the machine learning component, integrating NLP techniques to assess and classify news credibility

Amazon ML Challenge   September 2024
Machine Learning. Computer vision, OCR, NLP
- Engineered a scalable ML pipeline for Amazon ML Challenge 2024 to analyze 130,000+ product images using OCR and NLP for attribute extraction
- Selected among 74,000+ participants across 19,000+ teams nationwide

TECHNICAL SKILLS

Languages: Python, Javascript, SQL (Postgres)
Frameworks: FastAPI, Flask, React, Django
Developer Tools: Git, Docker, Streamlit, Hugging-face
Libraries: Pytorch, Tensorflow, Opencv, pandas, NumPy, Scipy, Matplotlib, Pillow