
PEARL DHIREN PATEL

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SUMMARY

Machine Learning Engineer specializing in production Generative AI, neural network prediction systems, and scalable ML pipelines. Focused on developing human-in-the-loop ML systems and advancing fair, transparent, and responsible AI.

EXPERIENCE

Ayzenberg Group

Pasadena, CA

AI Engineer

November 2025 - Present

- Developed LLM-powered applications using Retrieval-Augmented Generation (RAG) pipelines, improving answer accuracy and reducing hallucinated citations through grounded web data
- Built and scaled ML pipelines and evaluation frameworks for model training, inference, and performance monitoring

Easley-Dunn Productions, Inc.

Los Angeles, CA

Software Engineer

February 2025 - November 2025

- Designed and optimized backend systems, improving scalability and user experience for real-time interactive applications
- Collaborated across engineering and design teams to integrate APIs and implement data-driven features

RiskSpan

Arlington, VA

AI Engineer

October 2024 - December 2024

- Built Generative AI models (GANs, VAEs) to create synthetic financial datasets, improving data diversity and model accuracy
- Optimized models via hyperparameter tuning, feature selection, and bias mitigation, improving predictive accuracy
- Developed ETL pipelines for preprocessing and validating financial datasets

Reliance Jio

Mumbai, India

Software Development Engineer

August 2021 - May 2023

- Improved user experience across mobile and web platforms by identifying and resolving performance bottlenecks
- Developed and maintained backend services and data pipelines for an internal analytics platform used across business units, improving data processing speed and reliability

IMT Atlantique

Nantes, France

AI Research Engineer

June 2020 - July 2020

- Developed RNN and LSTM-based prediction models for solar energy power production, improving prediction accuracy by 50%
- Conducted causal and statistical analysis to validate model performance under real-world constraints

Blockchain and AI Lab, VJTI Mumbai

Mumbai, India

Research Intern

November 2019 - May 2020

- Engineered Deepfake detection models, with advanced CNN-based deep neural network architectures improving accuracy
- Built efficient video ingestion and preprocessing pipelines to handle large-scale datasets

EDUCATION

University of Southern California

Los Angeles, CA

Master of Science in Computer Science

June 2023 - December 2024

Coursework: Analysis of Algorithms, Machine Learning, Foundations of AI, Deep Learning, Information Retrieval and Web Search Engines, Quantum Computing and Cryptography, Mobile Games

University of Mumbai

Mumbai, India

Bachelor of Engineering in Computer Engineering

August 2017 - June 2021

PROJECTS

VisionTune AI - Improving Object Count Accuracy in Text-to-Image Generation Models

PyTorch, HuggingFace, LoRA, Python

- Developed a vision-language model integrating Stable Diffusion with object detection to improve object count accuracy
- Fine-tuned models using LoRA and HuggingFace Transformers, leveraging pretrained LLMs for text-to-image alignment

Detecting and Mitigating Bias in Face Recognition Models

TensorFlow, OpenCV, Python

- Designed a TensorFlow-based pipeline to detect and reduce gender bias in face recognition using statistical fairness metrics

PUBLICATIONS

- Khatal S., Rane J., Patel D., Patel P., Busnel Y., "FileShare: A Blockchain and IPFS Framework for Secure File Sharing and Data Provenance", In Advances in Machine Learning and Computational Intelligence, Algorithms for Intelligent Systems (Springer), 2021

ACHIEVEMENTS

Finalist in AWS DeepRacer Women's League - India 2021

- Developed a Reinforcement Learning based self-driving car racing agent using AWS DeepRacer and SageMaker