Divy Patel

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Education

Arizona State University (ASU), Tempe, AZ — Jan. 2021 – Jul. 2022
Master of Science in Computer Science (MSCS) (GPA: 3.55/4)

Pandit Deendayal Energy University (PDEU), India — Aug. 2016 - May 2020
B.Tech in Information and Communication Technology (GPA: 9.22/10)

Technical Knowledge

Programming Languages: Python, R, Java, JSON, C++, C#, HTML5, CSS, JavaScript, SQL (MySQL, PortgresSQL), GraphQL
Frameworks: Pandas, Seaborn, Matplotlib, Numpy, TensorFlow, PyTorch, OpenCV, Scikit-learn, LangChain, RESTful APIs
Tool and Technologies: LLM, NLP, Version Control , Amazon Web Services (AWS), Docker, Jira, Agile, Scrum

Work Experience

PetSmart, Phoenix, Arizona — ***Software Developer*** — May 2023 - Present
- Developed and deployed 25+ Python and Django-based microservices using Docker on AWS and implemented CI/CD pipelines.
- Improved transaction speed by **15%** and data retrieval speed by **20%** with MS SQL Server optimizations.
- Revamped API with Flask and GraphQL, boosting query responsiveness.
- Led QA testing with PyTest and Selenium, automating the testing process and reducing the common bugs.

Quartic.ai, Remote (San Jose, CA) — ***Data Engineer*** — Jul. 2021 - Jun. 2022
- Implemented data pipeline for pre-processing live data feeds with Python, GraphQL, and Redis with CI/CD integration.
- Optimized the pipeline to enhance predictive analytics and real-time risk monitoring.
- Developed a live dashboard for risk monitoring using Grafana and ReactJS.

HOPS Healthcare, India — ***Artificial Intelligence Intern*** — Apr. 2021 - Dec. 2021
- Achieved 85% accuracy in mobile-based skin disease detection by implementing OpenCV, TensorFlow and CNNs.
- Developed noise reduction algorithm in Python, aiding for detection of heart conditions from smartphone-recorded stethoscope sound.

Projects

LLM for Document Based Question Answering — ***Project***
- Developed Large Language Model (LLM) using RAG and CRAG to interpret PDFs, CSV, and JSON files, with **98%** accuracy.
- Used LangChain for efficient storage and retrieval, ensuring accurate responses by implementing Prompt Engineering.
- Enhanced chat automation processes by testing model performance on diverse and complex queries.

Smart Parking Database Management System — ***PDEU***
- Led development of comprehensive database management system for smart parking lot application.
- Generated 24,000 entries of dummy data to thoroughly test and validate the functionality of the database management system.
- Created comprehensive documentation with SQL queries, query output snapshots, and CSV exports for database testing and analysis.

Skin Disease Detector App — ***Google DSC Hackathon***
- Led the development of skin disease detector app during a 24-hour hackathon, using TensorFlow Lite for real-time classification.
- Preprocessed and augmented Harvard skin disease images using OpenCV and did model tuning to achieve **82%** accuracy.
- Developed and integrated the model into an Android app for disease classification via smartphone camera and to find nearest dermatologist.

Student Drowsiness Detection System — ***Project***
- Extracted 57,488 images from ultraLDD dataset, applied masking using dlib, faceutils along-with OpenCV to focus on eyes and mouth.
- Optimized data handling with a custom TensorFlow data generator for memory-efficient CNN training, achieving **93%** accuracy.
- Implemented real-time prediction from live camera feeds or saved videos, displaying drowsiness detection results with overlay on the screen

Smart Campus Human Detection — ***Project***
- Annotated a dataset used for a smart campus project involving human detection with a 3D LiDAR camera.
- Developed and tested a Neural Network AI model using 2D and 3D CNNs to detect human presence, achieving **98%** accuracy.
- Contributed to the development of a smart campus solution aimed at monitoring and managing crowd density in campus areas.

Temporal Hyperlink Prediction — ***Project***
- Conducted research on temporal hyperlink prediction in hypergraph using a bibliometric dataset of 50,000 neuroblastoma publications.
- Enhanced existing mathematical, machine learning, and deep learning techniques of graph link prediction for hypergraph link prediction.
- Developed predictive models with **77%** accuracy to forecast emerging research branches and predict recipes from available ingredients.

Node Classification in Graph Networks Using GNNs — ***ASU***
- Developed and optimized Graph Neural Network models (GCN, GAT, GraphSAGE) achieving accuracy of **90.16%** on the Cora dataset.
- Implemented and tested advanced techniques like attention mechanisms and scalable embeddings to improve classification accuracy.
- Collaborated in a team to analyze results and present findings, highlighting GNN applications in real-world scenarios.

Recent Achievements

- Publication in "MaterialsToday: Proceedings" on "Artificial intelligence powered material search engine" — Apr. 2022
- Led the team securing 2nd Prize in hackathon organized by Google's Developer Student Committee — Mar. 2021
- Led the team securing 2nd Prize in hackathon organized by Nirma University — Mar. 2021