Pranav Agarwal

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EDUCATION:

University of California - Irvine | Irvine, California **Aug 2023 - Dec 2024**
Master of Science, Data Science

VIT University | Vellore, India **Jul 2017 - Jun 2021**
Bachelor of Technology, Computer Science

WORK EXPERIENCE:

Data Scientist | *CVS Health* **June 2025 – Present**

- Developed and deployed machine learning models using Python to predict patient outcomes and optimize care delivery strategies, driving data-informed interventions that improved health outcomes across the CVS care ecosystem.
- Partnered with data engineering and clinical teams to analyze large-scale real-time healthcare data using SQL, transforming raw data into actionable insights through advanced statistical analysis and predictive modeling.

Data Scientist | *ImpactEdge* **Feb 2025 – June 2025**

- Automated sustainability document ingestion and parsing, reducing manual effort by 80% using Selenium, LlamaParse, and Python, and structured extracted content into a searchable Neo4j knowledge graph.
- Improved hybrid information retrieval accuracy by 60% through integration of FAISS vector search, BM25 ranking, and graph traversal, deployed via a FastAPI microservice and containerized with Docker Compose.

Machine Learning Researcher | *UCI AI Center* **Jun 2024 – June 2025**

- Improved breast cancer survival prediction accuracy to 89% by applying diffusion models on patch image and whole slide images with PyTorch. Worked in collaboration with Dr. Jana Lipkova.
- Achieved 81% base model accuracy by applying Principal Component Analysis (PCA) to reduce dimensionality of extracted features from deep learning architectures to train SVMs, Linear Regression and KNN models.

Machine Learning Engineer Intern | *Safran Aerospace* **Jul 2024 – Nov 2024**

- Saved $10,000 per aircraft per month by predicting equipment health using artificial neural networks trained on vibrational, temperature, pressure, and usage cycle data using Python and Pytorch.
- Increased model accuracy to 96% by developing an ensemble model combining LSTMs for temporal data and XGBoost for categorical features to improve bias and variance.

Data Scientist | *Airbus* **Jul 2021 - Aug 2023**

- Reduced monthly security alerts by 20% by employing analytical Bayesian methodologies using python to improve precision of alert systems by minimizing false positives and increasing precision.
- Achieved annual cost savings of $70,000 by integrating a recommendation engine built on python utilizing historical usage patterns to optimize cloud resource menu offerings.
- Engineered a comprehensive dashboard via Amazon QuickSight, synthesizing user data metrics to furnish actionable insights for informed decision-making, project management and strategic planning.

PROJECTS:

Lane Detection for Autonomous Driving Using Attention on UNet Transformer | github | medium

- Designed and implemented a lane detection model using PyTorch and OpenCV with UNet-based architecture, incorporating residual blocks and attention to enhance lane segmentation accuracy for autonomous vehicles.
- Developed image preprocessing and data augmentation pipelines, including edge detection, noise reduction, and morphological transformations, resulting in improved model performance on challenging lane detection scenarios.

Duplicate Detection in Job Postings Using LLMs | github

- Implemented Sentence Transformers to generate embeddings from job descriptions, enhancing duplicate detection by capturing semantic similarity, context-aware features. Fine-tuned large language models (LLMs) on job-specific data.
- Configured a Milvus instance, executed vector indexing, and developed a cosine similarity-based search method to identify duplicate job postings and to use RAGs to retrieve the correct job based on resume.

SKILLS:

Python, C++, R, SQL, Pandas, Numpy; OpenCV, Matplotlib, Seaborn, Neo4J, spark, Hadoop, hive, mapreduce, predictive analytics, looker, RAGs, GANs, LLMs, AWS solutions architect, Open-source contributor - Mozilla - github.