JAYRAJ M. PAMNANI

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EDUCATION

New York University | Master's in Computer Engineering | May 2026
Relevant Coursework: High Performance Machine Learning, Deep Learning, Machine Learning, Database Systems, Big Data, Applied Matrix Theory
Parul University | Bachelor's in Computer Science & Engineering with Specialization in AI | May 2024
Relevant Coursework: Data Structures and Algorithms, Natural Language Processing, GPU computing, Pattern Recognition, Object Oriented Programming, Computer Networks

SKILLS

AI/ML & Data Science: Python, R, TensorFlow, PyTorch, Scikit-learn, Keras, LangChain, LLMs, VLMs, NLP, Computer Vision, Coqui TTS/STT, OpenAI Whisper, ONNX, TensorRT, CUDA, Quantization, Pruning, Optimization
MLOps & Development: MLflow, DVC, BentoML, TorchServe, CI/CD (GitHub Actions, Jenkins), REST APIs, Django, Flask, Kafka, Airflow, OOP, Data Structures & Algorithms
Big Data & Analytics: Spark, Hadoop, Hive, BigQuery, PostgreSQL, MongoDB, MySQL, Pandas, NumPy, Tableau, PowerBI, Matplotlib, Seaborn
Tools & Platforms: GitHub, VS Code, Jupyter, HuggingFace, Ollama, AWS, GCP, Azure, Vertex AI, Docker, Kubernetes, n8n

PROFESSIONAL EXPERIENCE

Swaroop.ai - AI Intern, Ahmedabad, India   *03/2024 - 08/2024*
- Enhanced Text-to-Speech model performance by **25%** through **fine-tuning Coqui TTS** across multiple Indian languages, optimizing real-time synthesis pipelines.
- Improved Speech-to-Text accuracy by **18%** by refining Coqui STT models with domain-specific audio datasets and custom preprocessing scripts.
- Integrated **OpenAI Whisper** into the production workflow, increasing transcription accuracy on noisy datasets by **30%** and cutting i**nference latency by 20%**.
- Contributed to the end-to-end AI pipeline (data cleaning, model training, deployment), helping reduce model turnaround time from **3 days to under 24 hours**.

Robotskull - Data Scientist Intern, Vadodara, India   *10/2023 – 03/2024*
- Processed and standardized **100K+** sales and inventory records, improving data accessibility and analysis speed by **40%**.
- Built demand forecasting models that achieved **92% prediction accuracy**, driving **15%** more efficient inventory restocking decisions.
- Automated weekly analytics dashboards for the procurement team, reducing manual reporting time by **70%**.
- Identified **top 10 high-demand SKUs**, directly influencing procurement priorities and saving ~**10%** in inventory holding costs.

Freelance Software Developer, Vadodara, India   *07/2023 – 09/2023*
- Engineered and deployed a Django-based web app that automated data transfer between **QuickBooks and KatanaMRP**, cutting the client's manual bookkeeping workload by **~85%**.
- Built a robust **REST API integration** using Django (backend) and JavaScript (frontend), enabling seamless synchronization of **10,000+ financial and inventory records** with zero data loss.
- Designed and implemented **5+ custom verification layers**, achieving **99.8% data accuracy** before syncing to KatanaMRP.
- Deployed on **AWS EC2** with automated error logging and uptime above **99.9%**, ensuring secure, continuous operation for the client's business processes.

Parul University - Teaching Assistant for Operating Systems Course, Vadodara, India   *10/2022 - 03/2023*
- Supported **120+ students** in mastering OS concepts and C-based system programming, leading to a **15% increase in average lab scores**.
- Conducted weekly lab sessions, clarified student doubts, graded assignments and projects, and supported students in understanding Linux system programming and multithreading using C.

PROJECTS

Command Line Helper | *Python, CodeLlama-7B, ChromaDB, sentence-transformers, Flask, CLI, RAG*
- Developed an NL to bash assistant using retrieval-augmented generation (RAG) to translate natural language into safe, precise shell commands.
- Implemented ChromaDB-backed examples and embeddings, CLI + web interfaces, command history, and debug tooling to improve command accuracy and usability.

AnimeGAN | *TensorFlow, Keras, DCGAN, Matplotlib*
- Implemented a deep convolutional GAN to generate high-quality anime faces; tuned generator/discriminator training and regularization to improve sample diversity.
- Visualized training and evaluation metrics with Matplotlib to iterate on model performance.

HexDrop | *Next.js, TypeScript, AWS S3, Socket.io, PostgreSQL, Tailwind*
- Built a private, end-to-end encrypted file-delivery app with real-time transfers and progress tracking.
- Implemented Socket.io-based streaming, unique secure share keys, download management, and a responsive drag-and-drop UI.

Chapter | *Python (Django), Oracle Data Modeler, HTML, CSS, JS, Oracle*
- Designed a production-style relational schema from course requirements and implemented a secure library management web app.
- Added role-based auth (customer/employee), SQL-injection protections, deadlock handling, password encryption, and an employee dashboard for business metrics.

Music Streaming Analytics ETL | *Apache Airflow, AWS S3, Amazon Redshift*
- Designed and deployed an automated ETL pipeline to ingest user activity and song metadata from S3 into Redshift using Airflow DAGs.
- Modeled a star schema (songplays fact + users, songs, artists, time dims) with staging tables to speed analytical queries.