

Harshini Kodali

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WORK EXPERIENCE

Research Assistant: University of Houston, TX, USA

May 2024 - Jun 2025

- Conducted data-driven research on 5000+ small molecule screenings and molecular genetics datasets focused on chronic inflammatory diseases and cancers, contributing to discovery workflows for therapeutic targets.
- Applied advanced data preprocessing, statistical modeling, and visualization (Python, Pandas, Seaborn) to streamline data pipelines, improving overall research analysis efficiency by 30%.
- Collaborated with interdisciplinary teams of PhD researchers, and bioinformaticians to identify 3+ potential bio-markers for inflammatory disease prognosis, validating results through regression and correlation-based statistical models.
- Automated key stages of data validation, cutting manual review time by 40% and improving experimental reproducibility.
- Authored structured analytical reports and visual summaries that supported ongoing publications, grant proposals, and presentations within the biomedical research group.

Java Full Stack Engineer: Cognizant Technology Solutions, India

Jan 2023 - Dec 2023

- Contributed to the Trip-Management Platform serving 5,000+ active users, developing and maintaining end-to-end modules using AngularJS, Java, Spring Boot, and MySQL.
- Designed and implemented RESTful APIs to optimize data flow between frontend and backend systems, reducing system response latency by 20%.
- Re-engineered MySQL queries and database schema, improving backend throughput and cutting query execution time by 35%.
- Developed modular, reusable AngularJS UI components, accelerating front-end development cycles by 40% and improving overall user experience through responsive design and state management.
- Collaborated with cross-functional teams during agile sprints, contributing to continuous integration, testing, and deployment to ensure reliable feature delivery and platform scalability.

PROJECTS

AI Meeting Minute Generator (RAG + Fine-Tuning) - [Hugging Face Demo](#)

- Built an web app that records meetings, transcribes audio using Whisper, and generates structured summaries using a fine-tuned BART model and served inference via the Hugging Face pipeline for scalable, production-ready summarization.
- Integrated RAG with ChromaDB to reference past meeting context dynamically for richer summaries.
- Full-stack pipeline with FastAPI backend and React frontend for recording and review, deployed with Docker on Render.

AI Fashion Designer - GAN for Fashion Design

- Designed a PyTorch-based StyleGAN3 model to synthesize realistic 256×256 fashion images with enhanced visual diversity.
- Implemented a mapping network and modulated convolution blocks to improve control over visual styles and latent representation.
- Achieved realistic image generation with progressive training, R1 regularization, and evaluation via FID metric.
- Optimized model training with mixed-precision (AMP) and Adam optimizer ($\beta_1=0$, $\beta_2=0.99$), improving training stability and reducing memory use by 40%.

EDUCATION

MS in Engineering Data Science, University of Houston, TX| USA | 3.81/4 CGPA

Jan 2024 - Dec 2025

B.Tech in Computer Science and Engineering, VelTech University| India | 3.9/4 CGPA

Jun 2019 - May 2023

SKILL SET

Programming & ML Frameworks: Python, Scikit-learn, TensorFlow, PyTorch, LangChain, AI Solutions Development, Java

NLP & AI Techniques: LLMs, Prompt Engineering, Text Summarization, Named Entity Recognition, Sentiment Analysis, Topic Modeling, Generative AI, Retrieval-Augmented Generation

Databases & Visualization: MySQL, PostgreSQL, Power BI, Seaborn, Matplotlib, Pandas, NumPy

Other Tools: Advanced Excel, PL/SQL, Git Version Control, CI/CD, RAG Workflow Development, Jira, Agile Methodology

Core Competencies: Statistical Analysis, Machine Learning (Supervised, Unsupervised), Data Modelling, Customer Segmentation, NLP (Natural Language Processing), Data Manipulation, Analytical Techniques, Software Development, RESTful APIs

CERTIFICATIONS

- Deploy Kubernetes Applications on Google Cloud
- AWS Academy Graduate-AWS Academy Machine Learning
- Oracle Cloud Infrastructure 2021 Certified Architect Professional