NIRVISHA SONI

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EDUCATION

Master of Science - Computer Science, University of Florida, Gainesville, FL GPA 3.9/4 | **August 2024 – December 2025**
Coursework: Advanced Data Structures, Distributed Operating System Principle, Linear Algebra, Software Engineering, NLP.
Bachelor of Technology - Information Technology, VIT, Pune, India CGPA 9.62/10 | **August 2019 – May 2023**
Coursework: DSA, OOP, DBMS, Computer Networks, Data Science, Machine Learning, Image Processing and Computer Vision.

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, HTML5, CSS, SQL
Frameworks & Libraries: Node.js, NestJS, React.js, Flask, Django, Tailwind, AJAX, PyTorch, NumPy, Pandas, Tensorflow
Databases & Tools: MySQL, PostgreSQL, MongoDB, Git, Docker, RESTful APIs, Figma
Development Practices: Software Development, Agile (Scrum, Kanban), CI/CD, Software Architecture, Version Control

EXPERIENCE

Research Assistant | Xiao Fan Lab - University of Florida, Gainesville, FL **June 2025 – Present**
  – Working on RNA-binding protein (RBP) binding site prediction by extracting protein sequence embeddings using ESM3 and building downstream ML classifiers (MLP, CNNs).
  – Preprocessed and standardized biological datasets (FASTA format), structured them for training/testing.
  – Conducted performance evaluation using F1-score, ROC-AUC, MCC, and robustness tests across varied thresholds.

Graduate Student Assistant | University of Florida, Gainesville, FL **January 2025 – May 2025**
  – Mentored 200+ students on logic-driven problem-solving & debugging related to compiler design & regular expressions.
  – Built Python & JavaScript scripts to automate grading workflows, improving evaluation consistency & turnaround speed.

Graduate Analyst | Barclays Global Service Centre, Pune, India **July 2023 – July 2024**
  – Wrote optimized SQL scripts to audit and cleanse high-volume trade data, ensuring regulatory compliance and enabling reliable downstream reporting.
  – Automated post-trade validation by designing a serverless AWS Lambda pipeline that integrated with internal systems, reducing manual intervention by 60% and accelerating settlement workflows.

Machine Learning Intern | AlgoAnalytics Private Limited, Pune, India **January 2023 – April 2023**
  – Used transformer-based summarization models (T5, Pegasus) to generate concise summaries from financial news, improving clarity by 10% based on ROUGE metrics.
  – Conducted topic modeling on 5,000+ financial news articles using LDA and BERTopic.
  – Developed a model to analyze how financial news sentiment impacts stock price movements using rolling window analysis, achieving a Pearson correlation of 0.7.

PROJECTS

MedQuery - RAG Chatbot for Biomedical QA (Hosted Website) **March 2025 – Present**
  – Built a clinical chatbot using Retrieval-Augmented Generation (RAG) with FAISS-based vector search and MiniLM sentence embeddings for accurate biomedical Q&A.
  – Parsed and indexed 20k+ PubMed abstracts into a searchable FAISS store to enhance retrieval relevance for user queries.
  – Crafted structured prompts and safety guardrails for Gemini LLM to ensure truthful, clinically appropriate responses.
  – Deployed the system via Streamlit, combining real-time retrieval and LLM generation into an intuitive web interface.

Roamio: The Ultimate Travel Companion (GitHub) **January 2025 – April 2025**
  – Designed a full-stack platform enabling users to create, manage, and share personalized travel itineraries using React.js and Go.
  – Implemented dynamic web forms for itinerary posting and editing, with backend integration and secure storage.
  – Integrated RESTful APIs to fetch and display destination-specific content and interactive location-based recommendations.
  – Built a responsive UI with Tailwind CSS and modular React components to deliver a seamless cross-device user experience.

Re:Gen: AI-Powered Gmail Reply Assistant (GitHub) **February 2025 – May 2025**
  – Built a real-time system that listens for incoming emails and auto-generates personalized draft replies using Gmail API and LLM-powered prompt engineering.
  – Implemented a secure, multi-user backend using NestJS and SQLite, with OAuth2-based authentication and token management.
  – Integrated Google Cloud Pub/Sub to receive instant push notifications and ensure low-latency, event-driven reply generation.