Harish Manoharan

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EDUCATION

M.S. in Computer Science   May 2026
University of Texas at Dallas - Dean's Graduate Scholar   ***GPA: 4.0/4.0***
Relevant Coursework: Design and Analysis of Algorithms, Operating Systems, Computer Architecture, Database Design, Machine Learning, NLP, Artificial Intelligence, Web Programming, Secure Software Development

Integrated Dual Degree: M.Tech, Data Science & B.S., Biological Sciences   May 2024
Indian Institute of Technology Madras - INSPIRE Scholar, Young Research Fellow   ***GPA: 8.4/10.0***
Relevant Coursework: Linear Algebra, Statistics, ML, Reinforcement Learning, Advanced Graph Algorithms

EXPERIENCE

Software Engineer Intern   Jun 2025 - Aug 2025
Purgo AI   San Francisco Bay Area
- Engineered a full-stack IQ/OQ validation platform (React, Node.js, PostgreSQL) for Databricks CDR, reducing end-to-end cycle time by 90% by automating multi-step API workflows and compliance report generation
- Architected an embedded eSignature workflow (DocuSign API, OAuth 2.0, Webhooks), enabling in-platform signing and cutting approval cycle time by 50% through server-side envelope creation and real-time updates
- Automated GCP Cloud Run deployments via CI/CD (Docker, GitHub Actions), reducing release times by 80%

Software Engineer Intern   May 2024 - Jul 2024
Digitus Business Solutions   Bangalore, India
- Developed a self-correcting text-to-SQL agent with dynamic schema discovery using LangGraph, improving query generation accuracy by 40% and enabling non-technical users to perform complex database analyses
- Architected an agentic RAG pipeline that ingested multimodal knowledge (PPTs, videos), intelligently extracting and embedding relevant images and source links in answers to cut employee query resolution time by 70%
- Decreased contract drafting time by 60% by engineering a semi-automated human-in-the-loop generation tool

Technology Consulting Intern - Data Analytics   May 2023 - Jul 2023
PricewaterhouseCoopers   Bangalore, India
- Achieved a 15% YoY boost in sales forecast accuracy by implementing an XGBoost-SARIMA ensemble model
- Engineered a sentiment analysis pipeline on 50k+ reviews to extract key satisfaction drivers and product insights
- Built an interactive Power BI dashboard consolidating diverse business KPIs to guide strategic decision-making

PROJECTS

Market Insights Agent
- Architected a multi-agent financial analysis platform using Python and FastAPI, orchestrating specialized agents (Technical analysis, News & SEC Filings, Sentiment) to deliver comprehensive, real-time stock insights and advice
- Implemented a Redis caching layer for high-traffic endpoints (e.g., top stocks, news), significantly reducing API response latency for repeat queries and minimizing dependencies on external financial data sources
- Integrated Langfuse for end-to-end observability, enabling detailed tracing and evaluation of agent performance

Smart Email Assistant
- Architected a multi-agent system using LangChain and Gemini where a planner agent decomposes user requests for specialized retriever and drafting agents to synthesize information and generate context-aware responses
- Implemented a robust AI safety layer using Guardrails AI to structure outputs and redact PII, leveraging a separate LLM judge to validate the logical consistency and relevance of generated content
- Integrated Google Workspace APIs to allow for calendar event creation and contact management

Content Similarity Detection - Programming Club Project
- Achieved a 95% F1-score in detecting content similarity by implementing a Siamese network with LSTM encoders
- Developed a web service with FastAPI showcasing the live application at the annual club open house

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, TypeScript, Golang, SQL, C++, Java, C, HTML, CSS, Bash
AI/ML: LangChain, LangGraph, OpenAI API, Gemini API, Langfuse, pandas, scikit-learn, PyTorch, spaCy, Hugging Face
Cloud, Data and Backend: AWS, GCP, FastAPI, React, NodeJS, Postgres, MySQL, Redis, Docker, GitHub Actions
Certifications: AWS Solutions Architect Associate, AWS Certified Cloud Practitioner