Gowtham Vuppaladhadiam

Denton, TX | mastergowtham1906@gmail.com | (940) 629-5615 | LinkedIn | GitHub | Profile

Professional Summary

Senior Data Scientist with 10+ years of combined experience spanning data engineering, cloud platforms, and production machine learning systems. Proven track record of delivering data-driven solutions that improved team efficiency by 16% and increased annual revenue margins by 8%. Experienced in building and deploying intelligent AI systems, including GenAI applications, predictive models, and NLP pipelines. Strong expertise in Python, SQL, LLMs, and deep learning, with a collaborative, impact-driven approach to solving complex business problems at scale.

Project Experience

FinSight - Multi-Agent Wealth Management Platform (github/finsight_wip)

- Built a production-grade multi-agent wealth management platform using 3 LLMs, 7 AI agents, and a Random Forest model achieving 87% prediction accuracy across 800+ tickers, with real-time portfolio sync at under 1-second frontend latency; deployed on Azure Kubernetes Service with CI/CD.
- Designed a 3-agent debate architecture (Portfolio, Market, and Critic agents) for conflict-arbitrated investment recommendations, with Isolation Forest fraud detection and OTP-gated transaction security.

NaviDoc - Multimodal RAG Clinical AI System (github/Navidoc-clinical-ai-assistant-backend)

- Built a safety-first multimodal clinical AI backend combining medical image analysis and RAG-based retrieval, achieving 35% ROUGE/BLEU on clinical document Q&A; stack: FastAPI, PyTorch, PostgreSQL, MongoDB.
- Presented at Texas Health Informatics Alliance Conference (2025) and Texas Medical Center (2026).

QuitBuddy - AI-Powered Smoking Cessation App (with Johns Hopkins) (github/quitbuddy)

- Built a smoking cessation platform for teens with substance abuse disorder in collaboration with a Johns Hopkins faculty member, featuring a live AI avatar (Azure avatar streaming) and Azure Speech recognition; achieved 80%+ faithfulness score validated by external LLM evaluation.
- Tech: React, TypeScript, Supabase, MongoDB, Azure Speech, Azure avatar streaming, real-time video/audio, LLMs

Mental Health Wellness Chatbot (github/Mental_Health_Wellness_Chatbot)

- Built a multimodal mental health chatbot with real-time voice interaction and crisis detection that triggers automated email alerts on severe language, adapts empathetically to the user's emotional state, and maintains strict domain boundaries regardless of prompt injection; powered by Google Gemini 2.0 Flash.
- Tech: Python, FastAPI, React, TypeScript, Google Gemini 2.0, voice AI, crisis NLP

Pneumonia Detection - CNN & Explainable AI (github/CNN-chest-xray-pneumonia-classification)

- Developed a binary pneumonia classifier from chest X-rays using MobileNetV2 transfer learning, achieving 95% AUC with Grad-CAM and SHAP for clinical-grade model interpretability.
- Tech: Python, TensorFlow, Keras, MobileNetV2, transfer learning, Grad-CAM, SHAP, medical imaging

Hospital Readmission Prediction (github/Readmission-using-ML)

- Built an ML pipeline predicting 30-day readmission risk for diabetic patients; XGBoost achieved best ROC-AUC across evaluated models.
- Tech: Python, XGBoost, scikit-learn, healthcare data, classification

Work Experience

Robert Bosch GmbH, Data Scientist
Bengaluru, India (Feb 2021 – Dec 2024)

- Led development of a GenAI-based workflow automation system using LLMs, reducing manual project coordination and improving team efficiency by 16%.
- Engineered an Azure-based ETL pipeline for the database team - automating extract, load, query, and deployment workflows - reducing query turnaround time from 6 minutes to 1.8 seconds and eliminating manual processing.

- Partnered with business stakeholders to analyze sales data and develop classification and clustering models, directly driving an 8% increase in annual revenue margins.
- Maintained 99.999% availability across MongoDB, PostgreSQL, MySQL, MSSQL, and Redis for 70 enterprise clients on a mobility cloud platform, managing databases up to 5 TB and automating storage housekeeping to eliminate recurring disk-space incidents.
- Recovered a ransomware-locked MongoDB instance by mounting it locally and performing a full backup and restore, preserving a production client's complete dataset with zero data loss.

University of North Texas, Graduate Research Assistant
Denton, TX (Aug 2025 – Present)

- Conducting applied research under the Health Informatics Program Director on LLM hallucination mitigation for healthcare - using RAG to ground model responses against scientific literature, achieving 20-second end-to-end retrieval from complex medical documents.
- Benchmarking retrieval and prompt engineering strategies to improve factual consistency and interpretability of clinical LLM outputs against curated medical Q&A datasets.

University of North Texas, Research Assistant – ONR PERFECT Project
Denton, TX (2025 – Present)

- Contributed to AI-assisted cybersecurity education research under the ONR-funded PERFECT Project through curriculum development, survey analysis, and evaluation of high school STEM training modules.
- Co-authored 'Student Perceptions of AI-Assisted Cybersecurity Education in High School,' currently submitted for peer review.

Cognizant Technology Solutions, Database Administrator
Client: CapitalOne
Chennai, India (Mar 2016 – Feb 2021)

- Resolved a MongoDB split-brain incident on a 6-node replica set within 30 minutes by safely evicting the stuck secondary and resynchronizing it - maintaining zero business impact as the primary remained available throughout.
- Built Python and shell monitoring scripts covering 120 servers (prod, dev, QA), detecting and flagging infrastructure anomalies in 35 seconds, replacing a fully manual review process.
- Earned AWS SysOps Administrator certification and applied cloud infrastructure expertise to support high-availability database deployments for CapitalOne.

Wipro Technologies, Oracle Database Administrator
Client: CITI
Chennai, India (Jul 2013 – Feb 2016)

- Administered 800+ Oracle databases across CITI's US and Mexico operations (prod, UAT, QA, dev, test), maintaining 99.99% uptime SLA under a 24×7 on-call model for mission-critical banking workloads.
- Resolved high-severity production incidents for one of the world's largest banks with strict SLA compliance, developing expertise in Oracle performance tuning, replication management, and disaster recovery.

Technical Skills

Languages & Data: Python, SQL, NumPy, Pandas
ML & AI Frameworks: scikit-learn, PyTorch, TensorFlow, Keras, XGBoost, LightGBM, BERT, HuggingFace Transformers, CNNs, LSTMs, Transformers
Generative AI & NLP: Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Prompt Engineering, LLM Evaluation, NLP Pipelines
Cloud & MLOps: Azure, Azure ML, AWS, Databricks, Apache Spark, Docker, Kubernetes, Airflow, Git, CI/CD, Model Deployment
Databases: MongoDB, PostgreSQL, MySQL, Redis
Visualization: Power BI, Tableau, Streamlit, Gradio

Certifications

- Certification in Advanced Data Science & AI from Intellipaat & IIT Madras (Feb 2024)

- Microsoft Certified: Azure AI Fundamentals (Dec 2023)

Achievements

- Received Second prize in the UNT's entrepreneurial event 2026
- **Texas Medical Center (Feb 2026):** Presented CareLens, an AI-powered clinical assistant, to clinicians and healthcare researchers
- **UNT – Golden Eagle Award:** Founded a student organization from a 3-member team to 100+ members; received Golden Eagle Award for Best New Student Organization of the Year
- **UNT GSC:** HackWell Hackathon, 3rd Prize (Oct 2025)
- **AWS:** US Tech Alliance West Preliminary Jam, Runners Up (March 2025)

Publications & Posters

Conference Poster Presentation NaviDoc: A Multimodal RAG-Based Clinical Chatbot for Contextual EHR Analysis. Texas Health Informatics Alliance Conference, 2025 and Texas Medical Center, 2026.

Journal Article (Under Review) Integrating AI into Healthcare Cybersecurity: A Survey of Current Practices and Future Potential. Cybersecurity.

Journal Article (Under Review) Student Perceptions of AI-Assisted Cybersecurity Education in High School. Submitted for peer review.

Education

University of North Texas, Denton, TX
M.S. in Data Science (Expected Aug 2026)

- GPA: 4.0 / 4.0
- Relevant Coursework: Machine Learning, Deep Learning, Large Language Models

SRM University, Chennai, India
B.Tech. in Electronics and Communication Engineering (May 2013)

- GPA: 3.85 / 4.0