

AGAM VUPPULURY

agam.gatech@proton.me

Education

Georgia Institute of Technology

MS in Analytics

Atlanta, USA

Aug 2019 – Aug 2021

Dayalbagh Educational Institute

B.Tech in Electrical Engineering

Agra, India

July 2011 – June 2015

Experience

Lead Data Scientist - Senior Consultant

Ernst and Young LLP

July 2023 – Present

Remote

- **Strategic Consulting:** Conducted growth strategy assessment for client looking to expand into adjacent product categories and geographies. Developed and prioritized a list of opportunities across the value chain to convert into actionable insights. Developed PowerBI dashboard to communicate the results effectively and interactively.
- **Machine Learning for Manufacturing:** Led development of audio/piezo ML solution with Streamlit and Gradio UI. Hugging Face Spaces and Azure Fabric was used for solution deployment. The project was managed using agile (scrum framework).
- **Full-Stack IoT Data Pipeline:** Architected Analytics powered real-time pipeline for 50+ clients using Cumulosity, AWS Dynamo DB, Azure Fabric and Power BI. The data driven insights helped client save \$400/device approx on operation costs.
- The project leveraged Generative AI to customize KPI-based insights for each vendor, delivering analytics outputs in natural language for clearer communication.
- Automated KPI report distribution via email and SMS for 50+ clients, delivering daily device performance updates using Microsoft GraphAPI and Twilio.
- **Generative AI Pioneer:** Spearheaded multiple Gen AI solutions with prompt engineering, vector databases and RAG chatbots like Phi3.8, Gemma2, Llama-3.1, and Mistral-7B.
- **Advanced Analytics Repository:** Led 6-member team to build comprehensive in-house repository of AI, ML and Analytical models for vision, audio, NLP, and supply chain.

Data Scientist - Assistant Manager Supply Chain

United Technologies Corporation India Private Ltd.

January 2022 - July 2023

Bangalore, India

- **Flagship Global Supply Chain Project:** Initiated, conceptualized, and implemented Pratt and Whitney Canada's flagship B2B Analytics project.

- **Supply Chain Risk Prediction:** Developed Python-based ML model to predict delivery and quality risks using 1M+ data points.
- **Global Engine Parts Supply Chain Analytics:** Engineered comprehensive predictive, descriptive, diagnostic, and prescriptive analytics for 20K+ parts.

AI and ML Scientist - IT Analyst

Digital Innovation Centre, Tata Consultancy Services

September 2015 – January 2022

Bangalore, India

- **Computer Vision Expert:** Led development of cutting-edge object detection and image classification solutions, enhancing model accuracy by up to 50%.
- **Deep Learning Deployment:** Deployed advanced architectures (Detectron2, ResNet152, YOLOv5) for robust performance in diverse scenarios, including low-data situations.
- **Machine Learning for Efficiency:** Leveraged ML techniques like decision trees, ensemble models (Random forest, XGBoost) to achieve a 70% efficiency boost in client-deployed monitoring tools.
- **Time-Series Forecasting:** Developed a forecasting solution that directly contributed to a 25% profit margin increase for a housing client.
- **AI for Worker Safety:** Implemented a real-time deep learning system for worker safety compliance, reducing incidents by 20%.
- **Team Leadership & Training:** Led a team of 5 data scientists and conducted training sessions on unsupervised learning techniques like clustering, PCA, DBSCAN, SVD for 10+ team members.
- **Anomaly Detection:** Performed ETL and subsequent time-series analysis on Azure Databricks to detect anomalies in chemical concentrations for an oil and gas client.
- **Embedded Software Design:** Developed embedded software for an Electronic Engine Controller used in aircraft engines. Performed version control using PTC Integrity and followed agile software development.

Research Papers & Projects

- **Research Papers:** AI research work in-progress on improving LLM security in collaboration with faculty at IISER Kolkata
- **Open Source AI project:** Conceptualized, developed and hosted an end-to-end RAG based AI chatbot assistant for Organic farming which received international usage: [Click here to view the project](#)

Technical Skills

- **Languages:** Python, PySpark, R, MATLAB, SQL
- **Frameworks:** Langchain, LlamaIndex, Pytorch, Tensorflow, Keras
- **Libraries:** HuggingFace Transformers, Streamlit, Scikit-learn, Pandas, Numpy, XGBoost, Scipy, Matplotlib, Plotly, Seaborn, cvxpy, Gurobi, Prophet, statsmodel (ARIMA, SARIMA, ES), Microsoft CNTK, Glueviz, Auto-ML libraries
- **Developer Tools:** ChatGPT, OpenAI API, Microsoft VS Code, Git, Github, RestAPI, Pycharm, Spider, Jupyter Notebook, Anaconda ecosystem, Azure Databricks, Datalake, Azure ML Studio, Microsoft Azure Synapse, Microsoft Azure Fabric, Google Colab, PTC Integrity, PostgreSQL, PowerBI, Tableau, Docker, Jira, Confluence, Postman
- **Areas of Expertise:** Data Analytics, Data Science, Machine Learning, Deep Learning, Artificial Intelligence, Data modeling, Data Mining, Statistics