

# Anukriti Gupta

Principal Consultant with 10+ years of experience in architecting scalable data solutions and real-time analytics using cloud-native technologies, and distributed systems. Proven track record in driving customer success, leading cross-functional teams, and delivering high-performance solutions across AI(ML, NLP, Statistical Models), Graph databases, and GenAI applications for Healthcare, Banking, and Supply Chain industries. A prolific speaker and has given tech talks in various conferences, and workshops such as MinneAnalytics(US), DSCI, AIM, Nasscom, etc. A passionate advocate for gender diversity as an organizer of RLadies Delhi Chapter and Women in Data Science (WIDS) Delhi. Has been an academic scholar and received notable awards from eminent personalities like APJ Abdul Kalam (Ex President of India), Arun Jaitley (Ex Finance Minister), and Shashi Tharoor (Indian Politician).



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## EXPERIENCE

### Unilever – AI Consultant

Led the AI Hub, driving end-to-end delivery of GenAI and graph-based solutions, optimizing data pipelines and real-time analytics for multiple verticals.

Oct 2023 - Present

[GenAI Experience]

- Established a strategic partnership at **Toronto University** to drive innovation in graph-based solutions.
- Trained engineers from EY, Accenture and Deloitte on TigerGraph DB during live projects for support, implementation and seamless solution delivery.
- Architected an **LLM-powered solution** integrated with **TigerGraph**, leveraging a Knowledge Graph for optimized data retrieval and streamlined query processing, reducing operational complexity.
- Directed the creation of a **novel document parser within a RAG pipeline** leveraging **Vector DB (LanceDB)**, achieving **100% precision** with diverse documents, surpassing the accuracy of conventional methods, deployed the LLM using **TGIDocker from HuggingFace**.
- Designed and implemented a scalable **Web Scraper** using **Zephyr-7B-beta LLM**, extracting content from over 200 targeted websites, resulting in significant operational efficiency by saving the marketing team 15+ hours weekly.
- Spearheaded the development of **CodeDocumentor**, an **LLM application** that interprets code logic and translates it into seamless explanations, streamlined cross-team communication, leveraging **Graph DBs, Python**, and distributed cloud environments.

[GRAPH]

- Developed a **novel architecture for a Graph Recommender System** leveraging multi-versions of **Graph Neural Networks** to predict recipes with sustainable ingredients.
- Architected a **Graph Schema foundation**, successfully converting **60% of FMCG RDBMS data** into a scalable **Graph Global Schema**, laying the groundwork for future product development for **India's largest FMCG company**.
- Led the end-to-end development of **4 Products** on the Graph Global Schema, optimizing query runtime by 50%, while overseeing a team of 10+ **TigerGraph developers**.
- Optimized a complex GSQL query**, reducing its runtime from **24 hours to 18 minutes**, significantly enhancing performance over the original implementation by the **TigerGraph Partner team**.

### TigerGraph — Senior Customer Success Manager

Nov 2022 - Oct 2023

- Led **customer success initiatives across APAC**, managing key clients to deliver **scalable graph database solutions** and driving a 30% increase in solution adoption
- Assisted in **pre-sales initiatives** for fraud prevention, supply chain optimization, airline cost

## AREAS OF EXPERTISE

LangChain, LlamaIndex, RetrievalQA, VertexAI

LLM Models - Llama3.1, Llama3.2, Mistral-7b, GPT4o, Gemini,

TigerGraph, Neo4J, Pinecone, ChromaDB, LanceDB, MongoDB, Redis

DataBricks, PySpark, Kafka, Spark

Azure, AWS, GCP

Knowledge Graphs, Ontology, Quantum Computing, GraphML

Natural Language Processing, MultiModal AI, IncrementalML, Explainable AI

Deep Learning, Machine Learning Classification, and Regression Models, Speech Recognition Analysis

Anomaly Detection, Bayesian Models, Recommender Engine, Confirmatory Factor

management, and AML in the APAC region.

- Designed and implemented **graph-based solutions** for **Entity Resolution, Supply Chain Management, and Fraud Detection** for major banks and airlines.
- Designed and deployed a **GraphAI-based AML workflow system**, enhancing fraud detection and STR tracking for **real-time financial compliance**.
- Deployed a **scalable cycle detection solution** to identify circular patterns using **graphs** within real-time NSE/BSE trading data.
- Built a **Deduplication solution** on **TigerGraph** for **40 crore** prospects (**300 GB**), saving **\$1M monthly**.
- Developed an end-to-end **AML Graph-Based Case Management scalable solution** for a top bank in the **Philippines**.
- Developed **advanced UDF functions in C++**, enhancing solution quality and performance for complex graph-based applications, further optimizing system efficiency.
- Delivered **Graph ML solutions** for a Payment Service Provider in Southeast Asia.

## Zenon — *Solution Engineer*

Jan 2021 - Nov 2022

- Managed a team of data scientists, data engineers and web developers. Led client interactions and engagements from RFP process to Solution Delivery.
- **[Amex]**: Identified a **\$20M+ savings opportunity** by implementing a Goodwill Write-Off model within the existing system.
- **[Johnson & Johnson]**: Built an **automated NLP framework** for contract clause redlining to create backup clauses from the template, significantly reducing cycle times, utilized **Contract Documents (unstructured data)**.
- **[Johnson & Johnson]**: Developed an Automated Document Generation tool with **FastAPI and NLP**, cutting EU regulatory documentation time **from weeks to seconds**. Designed a **Knowledge Graph-based search engine** leveraging **Ontologies and NER models** for efficient **medical document retrieval**.
- **[Alliance Data System]**: Optimized a Credit Line Increase strategy, achieving a 25% quarterly revenue growth across **2M accounts**.
- **[Health Transformation Alliance]** - Devised an **outreach strategy** leading to higher wellness impact and **100\$ Mn annual reduction** in medical expenses for behavioral health patients by building a **look-a-like segmentation analysis using Machine Learning Models**.
- **[Hoag Health]**: Established a **digital analytics framework** from scratch, integrating **patient EHR** data to enhance digital engagement and patient experience using AI solutions.

## UnitedHealth Group — *Manager Data Scientist*

Jul 2015 - Dec 2020

- Developed a **Portfolio Optimization Strategy** leading to a **32% increase in member's activations** for Renew Rewards program using **LSTM/GRU model with an Attention mechanism**
- Developed AI framework to provide **affordable facilities for MRI** (within 5 miles radius) by predicting prior likelihood using ICDs, NCDs, and CPTs with **LSTM Models** for Medicare and E&I Business.
- Built **Member's Retention model** by predicting the likelihood of members leaving UHC's Medicare products and identified the key drivers using **Regularized Logistic Regression, Random Forest and Extreme Gradient Boosting method** (15% decline in retention rate)
- Established a **complete Data Science team from Scratch** for E&I line of business, **managed teams of 10+ DS**, and delivered various **customer-centric solutions** [Prioritizing offers to share as part of Inbound Calls, Developed Customer segments based on their lifestyle and Medical profile, Reducing Readmission within 30 days of discharge by identifying prior likelihood with RF, etc.]
- Lead an initiative PINE, to identify short-term triggers/events occurring in members' life impacting their journey on a real-time basis.
- **32% increase** in member's engagement within DHN program using RTE model; to identify the likelihood of a member to pick up a call using the **Gradient Boosting method**
- **Predicted Provider's rating** based on the "member's satisfaction with provider" metrics from Survey to take stringent actions against Provider with low rating using **Hierarchical Bayesian Modeling and Confirmatory Factor Analysis**.
- **Segmented Disabled members** based on their Physical and Behavioral need to effectively target the member based on their medical state and current medical condition using **Confirmatory Factor**

Analysis,

Product Analytics, A/B testing.

## PRESENTATIONS/TALKS

Women in Tech Global Conference 2024: Graph Analytics

AISS 2023: LLM for CyberSecurity

Gartner Conference in AI

Minneanalytics conference (Minnesota, USA): Provider Rating Score

Analytics India Magazine (Bangalore): ExplainableAI

AISS 2019 DSCI - NASSCOM: New Tech New You

Indo - Swiss Conference (Delhi):

Women in AI

Women in Machine Learning & Data Science (Minnesota, USA): Hyperparameter Tuning in ML Models

## AWARDS/ACHIEVEMENTS

1st prize in Zennovate (out of 15+ teams), Product development competition at Zenon

2 Patents in progress - Right Time to Engage, Model monitoring framework

1st prize (out of 20+

#### Analysis.

- Developed a hassle-free strategy of patient interaction with specialists by **identifying the need to visit a Specialist [with Loinc Codes]** using Lab data.
- Predicted the likelihood of a member to have **mobility impairment** in the future using **logistic regression, Random Forest, and PCA**. Identify their pain points and develop strategies to improve their member experience.
- Developed an automated tool for **IncrementalML**, to reduce unnecessary rescoring and validation while capturing trends of the latest data.
- Improved the methodology to define the members' level of engagement by analyzing their prior interactions, used **the Empirical Bayesian Model** to predict the likelihood of a member engaging in the future.
- Identified an optimized path for high outreach in **Breast Cancer Screening campaign** and to reduce unproductive communications using **Decision Trees and Markov Model**.
- Performed member's segmentation to understand callers behavior and optimize their contact strategy at member level clusters **with K-means & hierarchical clustering**
- Developed an **Uplift Model**, composed of Test and Control Models which identifies the impact of inbound call campaign on completion of screening available with the member post 120 days of the campaign using **Naïve Bayes Classifier Algorithm**
- Identified the key problems that would lead a member to be a Detractor (lowest score in NPS) using **Topic Modeling (Text Mining)**

## HSBC — *Data Scientist*

Jul 2014 - Jul 2015

- Worked with a global mandate that aims to support the **Anti -Money Laundering (AML)** Operations & Investigations teams for HSBC Correspondent Banking businesses in HK and UK
- Optimized AML investigation process by **62% reduction** in non-productive transactions by building Risk-based prioritization statistical model.

## EDUCATION

### IIT Bombay, Mumbai — *M.Sc. Mathematics*

Jul 2012 - May 2014 | **CGPA - 9.29/10**

- **2nd rank** (out of 30+ students), recipient of **Institute Academic Award** (for top 2 rank holders)
- **45th rank** (out of 20k+ candidates) in JRF (NET) conducted by UGC

### Hindu College, Delhi University — *B.Sc. Mathematics*

Jul 2009 - May 2012 | **Percentage - 88%**

- **AIR -4** (out of 10k+ candidates) **IIT JAM, Joint Admission Test** for Mathematics, conducted by IIT
- **3rd rank** holder in Delhi University (800+ students)
- **1st position** in all 3 years at Hindu College, Delhi University (60+ students)

## INTERNSHIPS

### MINISTRY OF STATISTICS, GOVT. OF INDIA

Jul 2013 - Aug 2013

Statistically analyzed demographic profiles of India using **Machine learning Models** on 2011 Census data under Chief Director (Statistics Division) using SPSS

teams) Optum Datahack ML competition to predict Service Outage

Selected in Top 5 - Barclays Hackathon 2019 (out of 300+ teams) - To build an Employee attrition framework. Also invited to Pune office

45th rank (out of 3k+ teams) Gala Image Classification Hackathon using SOTA CNN Model.

32nd rank (out of 1k+ teams) in Qiskit HackerEarth Quantum Computing Challenge

Promoted to a managing role in 6 months duration at UnitedHealth Group.

## LANGUAGES

Programming: Python, R, Spark, VBA, C++, Unix.

DB: SQL, Hive  
Frameworks: TensorFlow,

Keras, Pytorch, R Shiny.

Libraries: Spacy, NLTK, pandas, NumPy, Plotly, scikit-learn.