

# Lohith Prasanna Teja Kakumanu

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## EDUCATION

- **Master of Science: Data Analytics, University at Buffalo, The State University of New York**, Grade: 4.0/4.0, December 2024
- **Bachelor of Technology: Electronics & Communication, VVIT, India**, Grade: 7.6/10.0, September 2020

## WORK EXPERIENCE

**Data Scientist, Fannie Mae, VA:** Feb 2025 – Present

- **Refined Policy Chatbot:** Integrated **LangChain, FAISS, and AWS Bedrock** into the pipeline to curb *hallucinations from over-context retrieval*, improving policy-based Q&A accuracy and model reliability by **45%**.
- **Exploring LLM Evaluation:** Focused on assessing **policy-grounded GenAI responses** using **factuality, coherence, and retrieval relevance metrics** to improve reliability and reduce hallucinations.
- **Identified Loan Anomalies at Scale:** built PyTorch-based deep autoencoder models within **AWS inference** pipeline (Lambda, EC2, S3), enabling real-time anomaly detection in **loan-level capital computations** and cutting diagnostic latency by **50%**
- **Validated Capital Rule Exceptions:** Applied z-score, threshold checks, and percentile analysis to detect **discrepancies** in loan-level capital calculations, improving audit accuracy by 35% and reducing manual review effort by 60%
- **Deployed Capital Calculation Platform: Reengineered** and optimized core Enterprise production-grade full-stack app and data pipelines using S3, Redshift Spectrum, Glue catalog, integrating metadata with Dynamodb and triggering **15+** internal APIs, SageMaker instances boosting processing **throughput** by 40%
- **Documentation:** Built comprehensive documentation including SOPs, runbooks, **knowledge base** articles, **process gaps**, and **FAQs** covering the full lifecycle of the application

**Data Scientist, Crypto Clear, MA:** May 2024 – May 2025

- **Enhanced Fraud Detection:** Tuned hyperparameters and orchestrated algorithms using advanced Graph Neural Networks (GNN), reducing anomalies in fraud detection by 25% and improving prediction accuracy by 15%
- **Pioneered AI:** Accelerated blockchain intelligence by **30%** using a **RAG** built on **Bedrock** with **FAISS** for contextual insights
- **Transactional Analysis:** Classified 1M+ blockchain transactions via GNNs, boosting suspicious activity detection by 30%

**Research Assistant, University at Buffalo, NY:** September 2023 – Present

- **VILT model:** Fine-tuned ViLT on VQA v2, lowering prediction loss by 30% and overhauling accuracy by 15%
- **Statistical Validation:** Validated perturbation effects with hypothesis tests, revamping reliability understanding by 10%
- **Robustness Evaluation:** Published research on a novel **sampling strategy to evaluate deep learning** model robustness, achieving a 15% improvement in estimation accuracy and enhancing **interpretability** for debugging across diverse datasets

**Data Scientist, Infosys India Pvt. Ltd., India:** July 2021 – August 2023

- **Auto-Tagging System Implementation:** Implemented auto-tagging systems for LLMs, reducing manual labeling by 60% and speeding up model training
- **Customer Risk Scoring:** Revamped sentiment analysis models with NLP and Transformers, improving accuracy from 88% to 95%, aiding in customer risk profiling
- **NLP and Gen AI Chatbot Development:** devised a generative AI chatbot using advanced NLP techniques, overhauling customer interaction and satisfaction by 15% and alleviating support load
- **Employee Retention Analysis:** Applied **Propensity Score Matching (PSM)** & **Difference-in-Differences (DiD)** to evaluate the impact of retention strategies, improving decision-making accuracy by **15%** and reducing attrition risk

**Data Science and BI Engineer, Infosys India Pvt. Ltd., India:** September 2019 – July 2021

- **Data Modeling and SQL Optimization:** Led ETL and directed data modeling and design efforts, including SQL development and optimization of **stored procedures**, resulting in a 25% enhancement in data quality and a 35% increase in data accessibility
- **Resource Planning Optimization:** Led **Exploratory Data Analysis** for Infosys Project Alcon System, improving resource planning and optimization by 10%
- **Power BI Enhancement:** Directed **performance tuning, DAX, Row-Level Security** and optimization of 10+ Power BI reports and dashboards, mitigating load times by 20% and revamping overall user experience by 15% in dashboards

## PROJECTS

**Predictive Analysis for crime hotspots in India:** Python, Jupyter, Time Series, ARIMA, SARIMA, Bollinger Bands

- Engineered advanced predictive modeling techniques to forecast crime rates, revealing a 15% decrease in crimes in states experiencing 5% or more economic growth

**Applicant Tracking System:** Python, Gen AI, LangChain, Prompt Engineering & Prompt Tuning

- Developed an advanced ATS solution to streamline job application processes, improving candidate skill validation and increasing initial screening success rates by 45%, trimmed recruiter workload by 30%

## SKILL SET

**Programming & Interrelated:** Python, R, SQL, Numpy, Pandas, Data Mining, JAVA, Geospatial optimization

**Data Science:** Scikit, NLTK, SpaCy, TensorFlow, PyTorch, Keras, Django, Flask, Probability, Linear Algebra, Statistical Modelling, Classification, Clustering, Regression, Hypothesis Testing, A/B Testing, RAG, NLP, LLM, LangChain, EDA, Gen AI, ETL, Watson

**TOOLS:** Kubernetes, Docker, GIT, PostgreSQL, MySQL, SQLite, Azure Databricks, Jupyter, Visual Studio, Power BI, Tableau, AWS (Redshift, Glue, Lambda, S3, EC2, SQS, SNS, CloudWatch, SageMaker, DynamoDB), Excel, SAS, SSIS, SSAS, SSRS

**Leadership:** Event Management, Time Management, Innovation, Cross-team collaboration, Communication, **Sua Sponte**

## AWARDS AND ACHIEVEMENTS

- **Honored** with the **INFY-RISE Award** for exemplary leadership and execution in a business-critical project
- **Design Council Head of IETE Student Chapter**, organizing 15+ events and workshops, engaging 200+ students at VVIT
- **Infosys Certified** - Data Science Professional, SSIS Developer, SQL Professional