Uday Chandra Bhookya

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Education

Indian Institute of Information Technology, Tiruchirapalli — India
Bachelor of Technology in Computer Science and Engineering — *Aug. 2018 – May 2022*

Experience

Data Scientist — Aug 2022 – Present
Digitate - Tata Consultancy Services — *Pune, India*

- **Led** the development of AI-driven tools for **cloud cost optimization** in **Ignio's CloudOps product**, leveraging **anomaly detection**, clustering, predictive analytics, and prescriptive recommendations to achieve a **30-40% reduction in cloud spend**.
- **Built** time series forecasting models using **ARIMA** and **LSTM**, along with classification algorithms and a **cost optimization recommendation engine**, leading to enhanced spend visibility and actionable insights for cloud management.
- **Contributed** to **three patent filings** and co-authored a **research paper on cloud cost optimization**, which contributed to Ignio receiving the **TMC Cloud Product of the Year Award 2024**.
- **Designed** a **two-tower model** and a **graph-based recommendation system** to enhance explainability in **data storytelling** by creating **chains of insights**, reducing insight discovery time by **90%**.
- **Developed** algorithms for **smart insight summarization** and coherence using **advanced graph models**, resulting in a **research paper submission**.
- **Developed** a **pattern recognition** and **recommendation engine** for resolving IT tickets by identifying **spatial and behavioral similarities**, reducing manual intervention and improving resolution efficiency.
- **Created** algorithms for **smart insight similarity grouping**, integrating **human-in-the-loop processes** to refine recommendations and streamline IT operations.
- **Built** and trained a **TF-IDF-based text classification model** to identify sentence categories with over **85% accuracy**.
- **Enhanced decision tree algorithms** to mine deeper and more refined classification rules, resulting in the **publication of a research paper** on optimized decision-making systems.
- **Developed** algorithms to monitor the **business health of retail stores** using **correlation analysis**, aiding strategic decision-making.
- **Developed conversational AI solutions**, including **document Q&A** and **table Q&A** systems, leveraging **generative AI, LLMs, LangChain, and LangGraph** to enhance product documentation and customer engagement.
- **Implemented multilingual support** for product documentation, ensuring accessibility for diverse users across regions.
- **Mentored junior data scientists** in **statistical analysis and machine learning**, enhancing their technical skills and contributions to projects.

Full Stack Developer Intern — May 2021 – July 2021
LEO 1 — *Hyderabad, India*

- **Enhanced** key product pages across the platform to improve usability and deliver a seamless user experience, boosting overall customer satisfaction and engagement.
- **Developed** a utility for a coupon discount management system, enabling the product team to make data-driven decisions by streamlining analysis.

Technical Skills

Machine Learning & Deep Learning: Time Series Forecasting,, Classification, Regression, Anomaly Detection, Recommender Systems, Matplotlib, Seaborn, Neural Networks, CNNs, RNNs, Graph Neural Networks (GNNs)
Generative AI: LLMs, Prompt Engineering, LangChain, LangGraph, Retrieval-Augmented Generation (RAG)
Tools and Libraries: Pandas, NumPy, Matplotlib, Keras, Scikit-learn, TensorFlow, PyTorch
Programming Languages: Python, Java, C, JavaScript
Big Data & Cloud: PySpark, GCP, Azure
Databases: MySQL, PostgreSQL
Web Frameworks & Deployment: Django, Flask, ReactJs, GitHub

Publications

- **U. C. Bhookya**, K. Jethuri, S. R. Ravuru, and M. Natu, "Addressing Spend Leakage and Optimization of Cloud Costs," IEEE International Conference on Big Data (Big Data), 2024, Washington DC, USA. [Publication link]
- S. N. Samudrala, **U. C. Bhookya**, and M. Natu, "Mining patterns for proactive management of procure-to-pay exceptions," 2024 IEEE International Conference on Data Mining Workshops (ICDMW), 2024, Abu Dubai.[Under press]
- S. Saluja, R. Babu, **U. C. Bhookya** and M. Natu, "Addressing Insight Fatigue with Insight Summarization," International Communication Systems and Networks and Workshops, COMSNETS, 2025 [Under Press]
- R. Babu, **U. C. Bhookya**, S. Saluja, and M. Natu, "Addressing AIOps Data Fatigue with Insight Chains," Advances in Knowledge Discovery and Data Mining. PAKDD 2025 [Under review]
- **U. C. Bhookya**, "Statistical Significance Tests: A Statistical Way to Compare Data Populations," Digitate, Mar. 23, 2023. [Publication link]

Projects

Real-Time Hand Cricket: A CNN-Based Multiplayer Game | *VGG16 CNN, Python, Flutter* [link]

- **Built** a virtual Hand Cricket game as a mobile app using Flutter, implementing real-time image capture with a customized **VGG16 CNN model.**
- **Achieved 94%** accuracy in image classification, ensuring precise image detection for smooth game play.
- Collaborated in a team to deliver a high-quality, interactive user interface.

Hollywood Movie Recommendation System | *Python, Flask, Heroku* [link]

- **Built a Content-Based** movie **Recommendation system** using a custom dataset and implemented with the Flask framework.
- Deployed on Heroku to provide easy access with CI/CD integration.

Churn Predict: Telecom Customer Retention | *Python, XGBoost, Pandas* [link]

- Performed preprocessing and feature engineering on the churn dataset for detailed data analysis.
- Developed and evaluated various machine learning models, with **XGBoost** achieving the **83% accuracy** of.

Patents

- **U.C. Bhookya**, K. Jethuri, S. R. Ravuru, and M. Natu. Methods and systems to optimize cloud cost by analyzing resource utilization. Patent Application No. 202421066668 (Patent pending).
- **U.C. Bhookya**, K. Jethuri, S. R. Ravuru, and M. Natu. Methods and systems to optimize cloud cost by analyzing pricing models. Patent Application No. 202421066667 (Patent pending).
- **U.C. Bhookya**, K. Jethuri, S. R. Ravuru, and M. Natu. Methods and systems to optimize cloud cost by analyzing cloud resource usage. Patent Application No. 202421066669 (Patent pending).
- R. Babu, **U.C. Bhookya**, M. Natu. Data driven insight generation and creation of contextually consistent chains thereof. Patent Application No. 202421093804 (Patent pending).