Jayesh Santosh Zambre

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EDUCATION

Santa Clara University, Leavey School of Business — Santa Clara, CA
- Master of Science, Business Analytics Concentration – GPA 4.0 — Dec'24
- Coursework: Natural Languange Processing, Machine Learning, Deep Learning, Big Data Modeling

Indian Institute of Technology Kanpur (IITK) — Kanpur, IN
- Master of Technology – Bachelor of Technology, Materials Science and Engineering — Jun'19
- **Granted Patent:** Highly porous earthenware material with high damping property. Application No: 201911038028 Link

TECHNICAL SKILLS

Languages: Python, R, SQL, SAS
Libraries: NumPy, Pandas, Scikit-Learn, TensorFlow, Keras, PyTorch, NLTK, Tokenizers, Langchain, pdfplumber, OpenAI
Softwares: Jupyter Notebook, VS Code, Rstudio, GitHub, Databricks, Tableau, Power BI, SQL Workbench, Apache Spark, Docker
AI & LLM Techniques: Retrieval-Augmented Generation, Named Entity Recognition, Text Summarization, Zero-Shot Learning
ML Techniques: Clustering, Gradient Boosting, Random Forest, Neural Networks, Sentiment Analysis, Topic Modeling
Business Analysis: Performance Evaluation, Statistical Modeling, Hypothesis testing, Predictive Modeling, A/B Testing

PROFESSIONAL EXPERIENCE

Samvid – AI Engineer Intern — Santa Clara CA, July'24 - Present
- Engineered an LLM-based QA system leveraging Retrieval-Augmented Generation (RAG) to deliver precise answers related to legal documents, achieving high accuracy, reducing interpretation errors by 30%, and ensuring consistent reliability in document analysis.
- Crafted and executed a pipeline for knowledge graph extraction and function calling, enabling precise information retrieval to enhance multi-hop question answering with LLMs and increasing system performance by 25% through Redis-based historical data storage.
- Constructed a text summarization tool with LLMs to condense complex legal documents, enhancing information accessibility and accelerating review processes by 50% while maintaining critical details and ensuring compliance with industry standards.
- ***Tools & framework used: LLM, RAG, Knowledge Graph, Function Calling, Hugging Face Transformers, GPT***

Cisco – Data Science Consultant (Practicum) — San Jose CA, Jan'24 - Jun'24
- Formulated a ML model to forecast RMA demand, optimizing supply chain management and utilizing BERT with cosine similarity to improve engineer-customer alignment, facilitating proactive issue resolution and increasing process efficiency by 30%.
- Architected a pipeline integrating NLP and ML to analyze failure reasons from RMA data, classifying them into standardized codes and identifying trends, reducing resolution times by 25% and costs by 15% through targeted improvements and automation.
- ***Tools & framework used: Python, TensorFlow, PyTorch, Hugging Face Transformers, Jupyter Notebooks, Tableau***

Deloitte – Data Science Consultant — Gurgaon IN, Jun'22 - May'23
- Led the development and implementation of an automated system aimed at optimizing equipment effectiveness by forecasting machine vibration, resulting in reduced downtime by 20%, while concurrently increasing yield by 15%, leading to increased productivity.
- Orchestrated collaboration among three cross-functional teams to tackle supply chain inefficiencies by designing data visualization reports and dashboards that provided critical insights and enhanced overall operational efficiency by 25%.
- Established a robust evaluation framework for predictive models, resulting in a 30% improvement in model accuracy and a 40% reduction in false positives, increasing decision-making reliability and boosting stakeholder confidence in the system's performance.
- ***Tools & framework used: Time Series analysis, Databricks, Docker, Python, SQL, Power BI, GitHub***

UnitedHealth Group – Associate Data Scientist — Gurgaon IN, Jul'19 - May'22
- Devised and optimized over 20 behavior prediction models to rank offers based on customer preferences and historical interactions, resulting in a 25% increase in conversion rates through targeted marketing strategies and improved customer engagement.
- Implemented an end-to-end ETL pipeline leveraging PySpark to streamline data processing and enhance operational efficiency, achieving an 80% reduction in Turnaround Time (TAT) while delivering remarkable cost savings of $3M per month.
- Pioneered adoption of advanced indirect uplift modeling techniques, aimed at optimizing campaign effectiveness by targeting the right audience, resulting in a 35% increase in member engagement and $2M reduction in total campaign costs.
- Managed the complete data analysis pipeline using SQL (Hive) for data creation, cleaning, processing, and visualization, applying advanced statistical hypothesis testing to identify customer behavior shifts and the impact of caregivers, resulting in a 15% improvement in customer satisfaction and a 20% reduction in hospital admission expenses.
- Designed and maintained interactive dashboards showcasing metrics such as optimal outcome rates and closure rates, facilitating data-driven decision-making and enhancing stakeholder visibility, leading to a 20% increase in efficiency and strategic insights.
- ***Tools & framework used: Gradient Boosting, Meta Learning, A/B Testing, Python, SQL, R-studio, GitHub***

ACADEMICS & RESEARCH EXPERIENCE

Research Assistant – AI Labs — Jun'24 - Present
- Conducted literature reviews and synthesized findings on integrating knowledge graphs and text summarization with large language models, enhancing techniques that improved factual consistency and contextual understanding by 30%.

Teaching Assistant – Predictive Analytics — Apr'24 - Jun'24
- Enhanced student comprehension of advanced concepts, efficiently addressed queries, and meticulously graded assignments, reinforcing my expertise in AI and data science while contributing to a rigorous academic environment.

Dynamic Airline Revenue Optimization – Prescriptive Analytics — Apr'24 - Jun'24
- Developed a dynamic airline revenue optimization model leveraging Gurobi Python API and stochastic programming, resulting in substantial revenue increases through optimal seat pricing strategies and demand forecasting. Link

Movie Recommendation Systems – Machine Learning — Jan'24 - Mar'24
- Implemented a personalized movie recommendation system utilizing collaborative and content-based filtering techniques, augmented by KNN and SVD algorithms, to enhance user satisfaction and engagement. Link