

Madhumitha Sekamuri

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Summary

Business Analyst with 3+ years of experience in business development, strategic partnerships, and data-driven decision support across technology and mobility sectors. Skilled in conducting primary and secondary market research, analyzing competitive dynamics, and developing executive-ready materials to support go-to-market and partnership strategies. Adept at collaborating cross-functionally with strategy, finance, operations, and engineering teams to structure innovative agreements, drive ancillary revenue opportunities, and execute commercialization initiatives in fast-paced, high-growth environments.

Experience

Moxie
Business Analyst

Ashburn, VA
Feb 2025 – Present

- Conducted research on 10+ city pilot programs, analyzing transportation policies, competitive activities, and regulatory frameworks to produce detailed comparative briefs that highlighted partnership opportunities and potential pathways for client expansion.
- Built and refined financial and scenario models to evaluate three different service launch strategies, projecting adoption rates between 5–10% over a three-year horizon, which provided leadership with data-driven insights to guide commercialization decisions.
- Delivered monthly reporting packages and more than 10 leadership presentations, consolidating market intelligence and performance metrics in a way that improved executive decision-making efficiency by 20% and directly supported the submission of two municipal partnership proposals.
- Prepared partner briefing materials and pricing models that were incorporated into client negotiation efforts with two mobility operators, ultimately contributing to the approval of a pilot program that successfully expanded the client’s presence into a new region.

Behavioral Neuroscience – The Ohio State University
Data Analyst Intern

Columbus, OH
May 2024 – Dec 2024

- Implemented a scalable data analytics system on Google Cloud to process large mobility datasets, improving data annotation and reporting efficiency by 70% while reducing operational overhead.
- Developed deep learning pipelines (CNNs, LSTMs) that achieved 90%+ accuracy in sequential pattern forecasting, enabling scenario planning and adoption modeling for mobility use cases.
- Applied transfer learning with U-Net to extract fine-grained signals from unstructured datasets, generating insights with potential applications in safety monitoring and passenger experience analysis.
- Created a standardized end-to-end workflow for data preprocessing, model training, and reporting, reducing delivery timelines for insights and supporting stakeholder presentations and pilot assessments.

Pelotonia Research Center – Cancer Research
Business Data Analyst

Columbus, OH
Jan 2023 – May 2024

- Automated ETL workflows in Azure Data Factory (Python, SQL, Airflow) to process and standardize healthcare data, cutting reporting time by 50% and giving teams quicker access to usable datasets.
- Trained predictive models (XGBoost, Lifelines, scikit-learn) to forecast outcomes and identify survival patterns, turning raw data into actionable insights for project teams and research planning.
- Built interactive Tableau dashboards on Azure App Service to visualize survival curves, patient cohorts, and treatment comparisons, allowing stakeholders to explore results dynamically and spot trends for decision-making.
- Created presentation-ready data stories combining charts, model outputs, and key findings, which helped both technical and non-technical audiences align on next steps.

Cognizant
Senior Business Systems Analyst

Chennai, India
Mar 2021- Dec 2022

- Built and deployed risk classification models on Amazon SageMaker to identify high-risk insurance policies, improving fraud detection and underwriting accuracy by 30% across 100K+ policy records, which reduced financial exposure and strengthened client confidence
- Streamlined the MLOps lifecycle by deploying models as APIs and standardizing version control, cutting deployment timelines and ensuring compliance within a regulated environment.
- Orchestrated scalable data pipelines in Databricks to automate ingestion and transformation of 1M+ insurance records, reducing model retraining time by 40% and enabling real-time risk scoring that supported faster underwriting decisions.
- Delivered comparative benchmarking analyses of machine learning algorithms, providing leadership with evidence-based recommendations for selecting optimal risk models and improving ROI on data initiatives.
- Automated ETL workflows on Azure Data Factory to integrate large-scale healthcare datasets, improving data accessibility and cutting reporting time by 50%, which accelerated research cycles and stakeholder insights.

Skills

- Languages:** Python, R, Java, JavaScript, C, D3.js, HTML/CSS
- Business & Strategy:** Market & Competitive Research, Strategic Partnerships, Business Development Support, Scenario & Financial Modeling, Risk & Adoption Forecasting
- LLM & NLP:** OpenAI (GPT-4, ChatGPT APIs), Google PaLM, LLaMA 2, Mistral, LangChain, Retrieval-Augmented Generation (RAG), Prompt Engineering, ChromaDB, FAISS, Pydantic, TextBlob
- Data Analytics & Visualization:** Tableau, Plotly, Seaborn, Matplotlib, D3.js — building interactive dashboards and executive-ready reports for strategic decision-making
- Data Engineering & Pipelines:** Apache Airflow, dbt, SQL, MySQL, Azure Data Factory, AWS Glue, ETL Pipelines, Data Cleaning, Data Integration, Data Modeling
- Computer Vision & Image Processing:** OpenCV, SimpleITK, Dlib, Haar Cascades, FaceNet, Image Registration (Affine, B-spline, Deformable, Diffusion Models), High-Frame-Rate Video Analysis, SLEAP
- Cloud Platforms:** AWS (Lambda, ECS, Fargate, S3, SageMaker, Glue, Redshift), Azure (App Service, ML Studio, Data Factory, ML Compute), GCP (AI Platform, Composer, Compute Engine, TPU)
- Databases & Storage:** MySQL, PostgreSQL, Oracle SQL, SQL Server, NoSQL, DynamoDB, Redshift, Amazon S3, Elasticsearch, Neo4j
- Machine Learning & Forecasting:** Predictive Modeling, Anomaly Detection, Survival Analysis (Kaplan-Meier, Log-rank), XGBoost, LightGBM, H2O.ai
- Data Governance & Compliance:** Data Privacy (GDPR, CCPA, HIPAA), Safety-Critical Data Handling, Mobility & Telemetry Data Governance
- Certifications:** Microsoft Azure Cloud Fundamentals, Azure AI Fundamentals, Google – Python for Data Science Certification, CyberArk Trustee Certification, NPTEL – Java, Machine Learning

Projects

AI-Powered Business Idea Evaluation System:

Built an AI-driven pipeline to evaluate 500+ business ideas, combining LLMs (LLaMA 2, Mistral, ChatGPT APIs) with ML models (Logistic Regression, Decision Trees). Achieved 85% agreement with expert panels, enabling scalable market opportunity analysis and commercialization prioritization for new ventures

Autonomous Mobility Market Landscape Analysis

Conducted research on global AV pilots, regulations, and competitor strategies (Waymo, Cruise, Zoox) across 10+ markets, identifying \$500M+ whitespace partnership opportunities. Delivered an executive-ready strategy deck with 3 go-to-market scenarios that informed commercialization planning

Smart Mobility - [Smart-Mobility-GNN](#)

Designed a GNN-based traffic prediction model using PyTorch Geometric on Open Traffic Dataset, improving route optimization accuracy by 15%. Generated insights into congestion and urban planning that inform strategic partnerships with municipalities and fleet operators in the autonomous mobility ecosystem.

Data Licensing Pipeline Tracker

Built a CRM-style pipeline tracking 30+ prospective partners across insurance, mapping, and smart city sectors, ranking opportunities by ROI and strategic fit. Produced quarterly reports highlighting high-value opportunities and supporting partner prioritization in mock deal execution scenarios.

Education

Master of Science in Computer Science and Engineering – Ohio State University – CGPA: 3.53

Dec 2024

Coursework: Neural Networks, Data Mining, Fairness in Artificial Intelligence and Databases, Data Visualization, Parallel Computing, Advanced OS, Cybersecurity

Bachelor of Technology in Computer Science and Engineering – Anna University – CGPA: 4

June 2021

Coursework: Problem-Solving, Object-Oriented Design, Data Structures & Algorithms, Databases, Operating Systems, System Design, Networking, Machine Learning