Sushmitha Birudala

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SUMMARY

Results-driven Data and Business Intelligence Analyst with over 4 years of experience in data analytics, BI reporting, and scalable data operations across banking, retail, and academic sectors. Adept at translating business requirements into actionable insights using SQL, Python, Tableau, and Excel. Foundation in data engineering concepts including ETL pipelines, Airflow orchestration, and data warehousing. Known for driving measurable business impact through deep analytical thinking, stakeholder collaboration, and data storytelling.

TECHNICAL SKILLS

Programming Language	:	Python, R, SQL, DAX
Visualization Tools	:	Tableau, Power BI, Excel, Looker
Data Analysis	:	Pandas, NumPy, Matplotlib, Seaborn, Excel (Pivot Tables, Power Query, VLOOKUP)
Big Data & ETL Tools	:	Apache Spark, PySpark, Apache Airflow, Kafka
Cloud Technologies	:	Google Cloud Platform(GCP), Amazon Web Services(AWS), Microsoft Azure
Databases	:	MySQL, SQL Server, MongoDB, PostgreSQL, Snowflake
Collaboration Tools	:	Git, GitHub, Jira, Confluence
Tools/Frameworks	:	Docker, APIs, Jenkins, Google Analytics, Microsoft Visio
Machine Learning	:	Scikit-learn, TensorFlow, Regression, Decision Trees, Time Series Forecasting, A/B Testing, NLP.

PROFESSIONAL EXPERIENCE

Caterpillar, Chicago, IL   June 2024 – May 2025
Business Data Analyst

- Partnered with product and marketing stakeholders to gather reporting requirements and define KPIs aligned with business objectives.
- Designed and deployed **automated dashboards** (Yearly, Quarterly, Monthly, Weekly) using **Power BI**.
- Authored complex **SQL transformations** and built **DAX-based measures and computed tables** for dynamic, filter-responsive visuals.
- Led customer cohort and campaign performance analyses, improving retention tracking accuracy by **25%** through segmentation and behavioral insights.
- Collaborated with data engineers to validate and ingest raw event data into BI pipelines, improving reporting SLA compliance by **15%**.
- Implemented **data refresh schedules, row-level security**, and access controls in Power BI Service to ensure secure, timely data access across business units.
- Delivered ad hoc analytical reports using Power BI and **SQL Server**, supporting senior leadership and cross-functional initiatives.
- Conducted stakeholder walkthroughs and dashboard training sessions to promote self-service BI and data literacy across non-technical teams.
- Created documentation of KPI definitions, data sources, and report logic to support BI governance and team onboarding.

Northen Illinois University, Dekalb, IL   Jan 2024 – May 2024
Graduate Assistant

- Handled teaching, research, and administration tasks, utilizing Excel for data management and contributing to efficient departmental operations.
- Supported faculty by grading assignments, preparing instructional materials, and leading class discussions, which improved student engagement and enhanced my teaching skills.
- Collaborated with professors on data collection and analysis, contributing to meaningful academic findings and enhancing research methodologies.
- Coordinated logistics and maintained departmental records using productivity tools (Google Workspace, Microsoft Office).

Walmart, Chennai, India   June 2021 – Aug 2023
Data Analyst

- Designed and maintained **retail performance dashboards** in **Tableau**, supporting over **50 business users** across marketing, sales, and supply chain teams.
- Extracted, cleaned, and analyzed over **10M+ monthly transactions** using **SQL and Python** to uncover fraud indicators and inventory anomalies.
- Partnered with data engineering to define robust **data models and staging layers**, improving report accuracy and reducing refresh failures by **20%**.
- Conducted **stockout and overstock trend analysis**, enabling inventory optimization and reducing waste by **12%**.
- Performed **customer segmentation and behavioral analysis**, identifying high-value cohorts and informing targeted retention strategies.
- Collaborated with business stakeholders to track key metrics such as revenue per region, product conversion rates, and promotion impact.
- Participated in regular **data quality audits**, resolving inconsistencies and improving trust in BI reporting.

HDFC Bank, Chennai, India   **Nov 2020 – May2021**
Data Analyst
- Conducted **credit card portfolio analysis** using SQL and Excel to identify high-value customer segments, uncovering upsell opportunities that increased campaign ROI by **15%**.
- Automated **MIS (Management Information System) reporting workflows** using **Python**, reducing manual effort and report delivery time by **50%**.
- Analyzed monthly customer trends and financial product adoption patterns, preparing insights for senior leadership to guide product strategy.
- Created dashboards and summary reports to track KPIs such as spend categories, payment behaviors, and delinquency rates.

PROJECTS
Fake Tweet Detection
- Built a deep learning model using CNN to detect AI-generated tweets with ~90% accuracy on the TweepFake dataset.
- Applied NLP preprocessing (tokenization, lemmatization, stemming) and compared models including LSTM, GRU, and Random Forest.
- Integrated OpenAI-generated tweets to enhance dataset relevance and trained a scalable architecture using modular plugins.
- Deployed a real-time classification API using Django REST Framework for end-user tweet analysis.

NYC Yellow Taxi Trip Analysis
- Designed a production-scale ETL pipeline using PySpark to process 100M+ taxi records with full validation and enrichment.
- Engineered transformations including trip duration, airport flag, and speed metrics; stored results in PostgreSQL using Spark JDBC.
- Scheduled and orchestrated ETL tasks via Apache Airflow with retry handling and date-based partitioning.

Real-Time Weather ETL Pipeline
- Built an automated weather data pipeline using Airflow, pulling API data for any city with daily scheduling and notifications. Implemented alerting, logging, and fault-tolerance for reliable and maintainable DAG operations.

London Bike Ride Analysis
- Analyzed 4.2M+ public ride records over 12 months using moving averages and weather filters. Identified weekday/weekend usage patterns and temperature-linked ride drops.
- Designed dynamic filters for station, time of day, and weather impact; improved user interactivity for non-technical viewers.

Cyclistic Company Customer Insights
- Explored 800K+ rides to compare behavior across customer types. Identified seasonal drop-offs and retention opportunities, simulating a 20% uplift in targeted engagement.
- Delivered geo-spatial and trend-based visuals to support simulated marketing team use cases.

Minnesota Traffic & Weather Dashboard
- Processed 10M+ records across 5 years to visualize the relationship between holidays, weather, and traffic volumes.
- Uncovered 30% spikes in holiday traffic and built filters for policy planners to explore by region and time.

HR Analytics Dashboard
- Created an HR reporting tool using mock employee data (3K+ records) to analyze attrition trends, tenure risks, and diversity gaps. Simulated how executive teams could reduce attrition by 15% through department-level insights.

King County Housing Market Explorer
- Visualized 100K+ real estate sales records with location-based price filters. Identified undervalued zip codes and created price-per-sqft and room-count breakdowns. Enabled investor-style insights for property valuation strategies.

EDUCATION
- **Northern Illinois University – Dekalb, IL, USA (Aug 2023 – May 2025)**
  Master of Science, Computer Science - **GPA 3.5**
- **Sri Padmavathi Mahila University, India (2017 - 2021)**
  Bachelor of Technology, Electronics and Communication Engineering (ECE) - **GPA 3.4**

CERTIFICATIONS
- Google Data Analytics Certificate – Coursera
- Six Sigma Yellow Belt & White Belt – CSSC
- AWS Certified Cloud Practitioner – Amazon Web Services
- AWS Machine Learning Foundations –AWS
- Tableau Desktop Specialist