**Sushmitha Birudala**

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**SUMMARY**

Results-driven Data and Business Intelligence Analyst with 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

Visualization Tools : Tableau, Power BI, Excel, Looker, DAX

**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**

**CNA Insurance, Chicago, IL June 2024 – Present**

**Business Data Analyst**

* Partnered with product, underwriting, and marketing teams to gather reporting requirements and define **KPIs** aligned with policy growth, claims processing, and customer retention objectives.
* Designed and deployed automated **Power BI dashboards** (Yearly, Quarterly, Monthly, Weekly) to monitor claims volume, premium trends, and risk exposure.
* Authored advanced **SQL transformations** and built **DAX**-based measures to drive dynamic, filter-responsive insurance insights across product lines and geographies.
* Extracted and validated agent, policy and claims data from **Salesforce Financial Services Cloud(FSC)** to power retention tracking, customer segmentation and operational reporting.
* Led customer segmentation and campaign performance analysis, improving policyholder retention tracking accuracy by **25% through behavioral cohorting** and **claims frequency patterns**.
* Collaborated with data engineering teams to validate and ingest policy, claims, and agent activity data into BI pipelines, improving reporting **SLA compliance**.
* Implemented data refresh schedules, row-level security, and access control in Power BI Service to ensure secure access for underwriters, agents, and business leaders.
* Delivered ad hoc reports to support regulatory compliance, pricing strategy, and portfolio performance reviews using SQL Server and Power BI.
* **Conducted training sessions** and walkthroughs for non-technical insurance staff to promote self-service analytics and improve data literacy across departments.
* **Documented KPI definitions** (e.g., Loss Ratio, Combined Ratio, Retention Rate), source mappings, and report logic to strengthen BI governance and onboarding processes.

**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 like **Google Workspace, Microsoft Office**.

**Walmart, Chennai, India March 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.
* 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.

**PROJECTS -** [GitHub](https://github.com/Sushmi08B) | [Tableau](https://public.tableau.com/app/profile/sushmitha.birudala/vizzes)

**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