

# Kshamaa Suresh

(313) 549-3330 | ks4423@columbia.edu | www.linkedin.com/in/kshamaasuresh

## EDUCATION

### Columbia University

#### Masters of Science Data Science, 3.50

Coursework: Exploratory Data Analysis, Algorithms for Data Science, Applied Machine Learning, Machine Learning for Functional Genomics.

New York, New York

Sep 2025 - Dec 2026

### MS Ramaiah University of Applied Sciences

#### Bachelors of Science Computer Science, 9.74 / 10.

Coursework: Database Systems, Artificial Intelligence, Computational Intelligence, Deep Learning, Data Analytics, Python for Data Science, Internet of Things, Data Structures and Algorithms, Design and Analysis of Algorithms.

Bangalore, India

Aug 2019 - Aug 2023

## EXPERIENCE

### Ecolab

#### Associate Business Process Analyst

Bangalore, India

Jan 2025 - Jul 2025

- Led strategic data integrity initiatives using Generative AI (Claude, Cortex) to computerize error detection in Snowflake, slashing manual validation by 80% and boosting data reliability.
- Managed full development lifecycle for AI analytics solutions, from prompt engineering on Databricks to deploying user-facing Streamlit apps and ThoughtSpot reports, helped analytics be completed in a matter of 3 hours.
- Partnered with GBS business units to develop a centralized Snowflake stage and ThoughtSpot dashboards, streamlining daily metric reporting and source-to-target validation.

### Ecolab

#### Associate Data Engineer

Bangalore, India

Jul 2023 - Dec 2024

- Automated testing of complex SAP-to-Snowflake data pipelines for Supply Chain projects, ensuring integrity across all transformation layers. Ensured 98% accuracy between data.
- Developed automated scripts to validate millions of records during Snowflake migrations, slashing issue resolution from 2-3 days to 4-5 hours.

### Ecolab

#### Intern

Bangalore, India

Jan 2023 - Apr 2023

- Designed and built a regression automation tool in Python to validate data transformations across Snowflake layers (ILA, ILB, Base Model).
- Delivered a key internship project having enhanced data quality assurance and was submitted as a final university thesis. Internship project covered 50% of final semester grade.

## PROJECTS

### Ecolab: Generative AI for Data Analytics

- Engineered a Generative AI data validation system using Claude API on Databricks (70% better accuracy) and Cortex AI on Snowflake to automatically identify variances and errors in Snowflake tables via advanced prompt analysis.
- Constructed an NLP pipeline to structure and process generative AI outputs, storing results in Snowflake and automating ThoughtSpot reports for business user consumption.
- Architected a full-stack data quality application with Snowflake Cortex, Mistral-large2, and prompt engineering to detect column-level data anomalies, processing JSON outputs into structured tables.
- Designed and deployed an interactive Streamlit UI on Azure, enabling business users to self-serve and visualize data mismatches, reducing manual validation burden.

### Ecolab: Email Alerting System

- Devised an computerized pipeline monitoring system leveraging Python within Snowflake to query execution logs and track daily status of all data pipelines.
- Engineered a proactive email alert mechanism automatically notifies stakeholders of pipeline failures, including specific details including failed job names and timestamps. Email alert mechanism ran in less than 120 seconds.
- Enhanced operational visibility and reduced downtime by providing real-time failure notifications, eliminating need for manual log checks and accelerating response times.

### Ecolab: GBS Reporting

- Architected a centralized Snowflake stage environment to consolidate data from multiple subject area tables, streamlining access to vital business metrics for the GBS team.

- Developed automated ThoughtSpot dashboards to visualize key metrics and perform daily source-to-target data comparisons, enabling real-time error detection.
- Enhanced data integrity and reduced manual reporting effort by providing self-service analytics, eliminating need for tedious daily table iteration.

#### **Ecolab: One Customer BCA Validation**

- Constructed an ML classification framework in Python to identify and correct erroneous Ultimate Parent Code assignments in Snowflake data sourced from MDM.
- Engineered a data validation system computerizing detection of incorrect customer-site matches, ensuring accuracy of critical "One Customer" initiative data.
- Delivered actionable business intelligence by generating detailed reports on data quality issues, enabling proactive corrections before erroneous data reached customers.

#### **Ecolab: Institutional BI Migration**

- Automated validation for a large-scale data migration from SQL Server to Snowflake by developing a Python script to compare millions of records using primary key joins, ensuring data integrity.
- Engineered a data reconciliation system automatically identifying mismatched records and generated detailed result reports, pinpointing exact discrepancies for developers.
- Slashed bug-resolution timelines from 1-2 days to a few hours by providing developers with precise primary keys and data variances, dramatically accelerating migration process.

#### **Ecolab: Snowflake and View Regression Automation**

- Constructed an automated regression testing framework in Python to certify data integrity across multiple Snowflake layers (ILA, ILB, Base Model), streamlining data quality assurance process.
- Engineered a system to monitor over 1,000 production database views, automatically categorizing by project and logging performance impacts in Snowflake to prevent customer-facing issues.
- Formulated a user-friendly automation tool generated and executed complex validation queries based solely on a table name, simplifying testing for non-technical users.
- Delivered a key automation project cut down manual testing efforts and was recognized as a final university thesis, demonstrating strong applied data engineering skills.

#### **MS Ramaiah University: Smart Irrigation Using Sensors**

- Formulated and prototyped a smart IoT irrigation system leveraging NodeMCU ESP8266, integrating soil moisture and DHT11 sensors to collect and transmit real-time environmental data to a cloud interface.
- Engineered an computerized watering solution optimizing agricultural water usage, supporting sustainability goals by minimizing waste through data-driven triggers.
- Published system architecture and results as a research paper in the IFERP journal, contributing academic insights to field of IoT applications in sustainable agriculture.

#### **Columbia University: Skincare Recommender**

- Built LLM-based skincare product recommendation system as a part of AML course.
- Accepts user questions and provides personalized suggestions.

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#### **SKILLS**

**Technical Skills:** Applied skills like: Python, Java, SQL, Deep Learning, Generative AI, Model Development, Snowflake, Azure, ThoughtSpot, Git, Excel, UI UX design.

**Libraries Used:** Employed tools like: TensorFlow, Scikit-learn, PyTorch, Pandas, Numpy, Matplotlib.

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#### **PUBLICATIONS**

- Research Paper in the IFERP journal titled Smart Irrigation System using Soil Moisture sensor as a part of undergraduate degree.
- Self published anthology titled A Memo of Memories available on Amazon.
- A compilation of poems and stories titled World With Words available on Amazon.