ALLIANT NATIONAL - RISK PROFILING

Computer Science
UNIVERSITY OF COLORADO **BOULDER**

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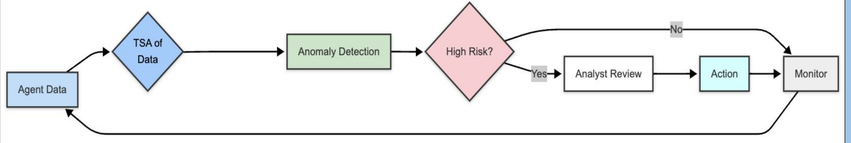
ALLIANT NATIONAL TITLE INSURANCE COMPANY

PROBLEM STATEMENT

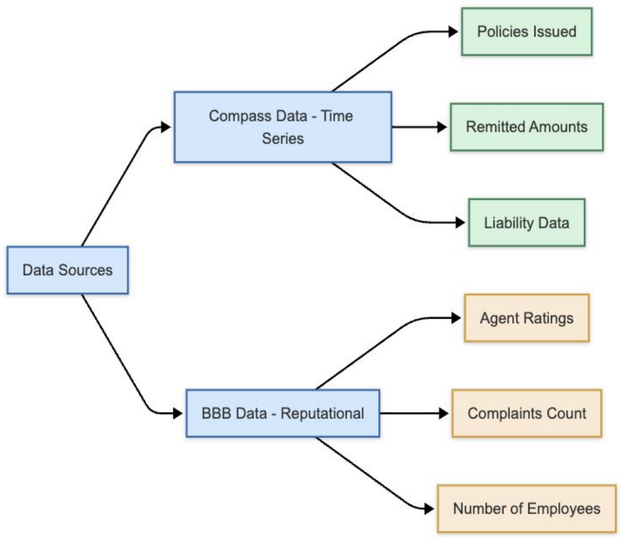
- **Analysts manually review** agent activity across all 50 states to assess risk.
- The process is **repetitive, and labor-intensive** and **not proactive.**
- There's a need for a system to **automatically flag anomalous agent** behavior.

OBJECTIVE

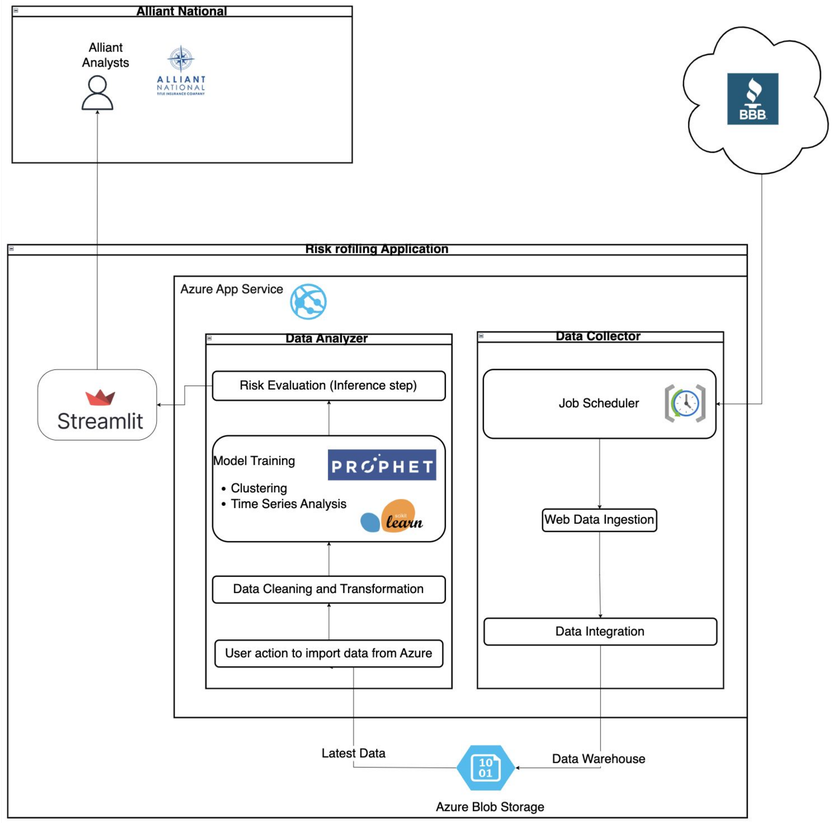
- **Automate risk profiling** of agents.
- Perform **time series analysis** on agent data to flag anomalous agents.
- Assist analysts to identify at-risk agents and **reduce the manual effort involved**.



DATA

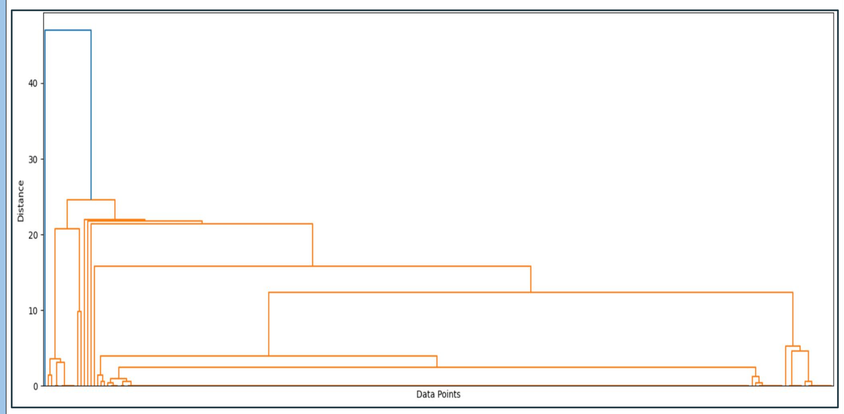


ARCHITECTURE



HIERARCHICAL CLUSTERING

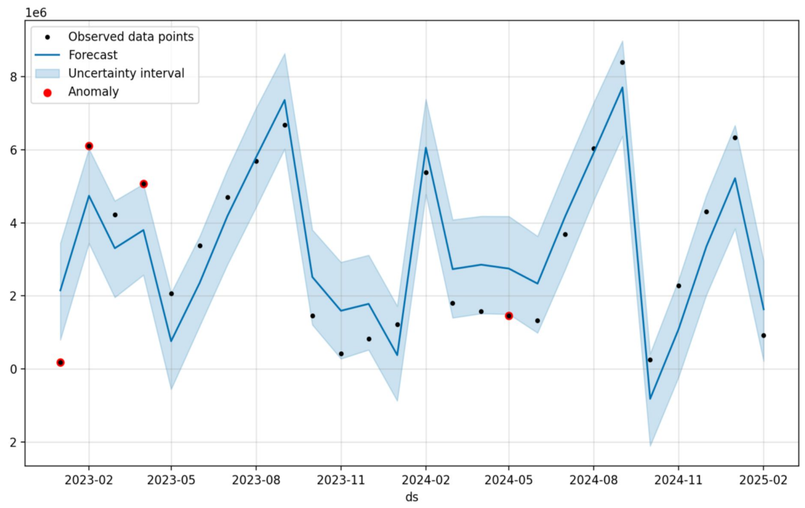
Hierarchical Clustering Dendrogram



Clustering on BBB - **find how to classify data.**
Most “natural” split (2 clusters): cut at y ≈ 30

TIME SERIES ANALYSIS

- **Forecasting**: TSA on Compass agent data to capture trends and seasonality.
- **Anomaly Detection**: Flagged intervals where observations fell outside confidence bounds.
- **Visual Comparison**: Overlaid predicted vs. actual time series to clearly highlight deviations.



CONCLUSION

- Provide analysts with **clear visual insights** into unusual agent activity.
- **Reduce manual efforts** by identifying potential at-risk agents.
- Provide **flexible time frame selection and adjustable Z-Score** to control anomaly sensitivity.

FUTURE SCOPE

- Model Enhancement
- Expand to more sources of data
- Real time monitoring