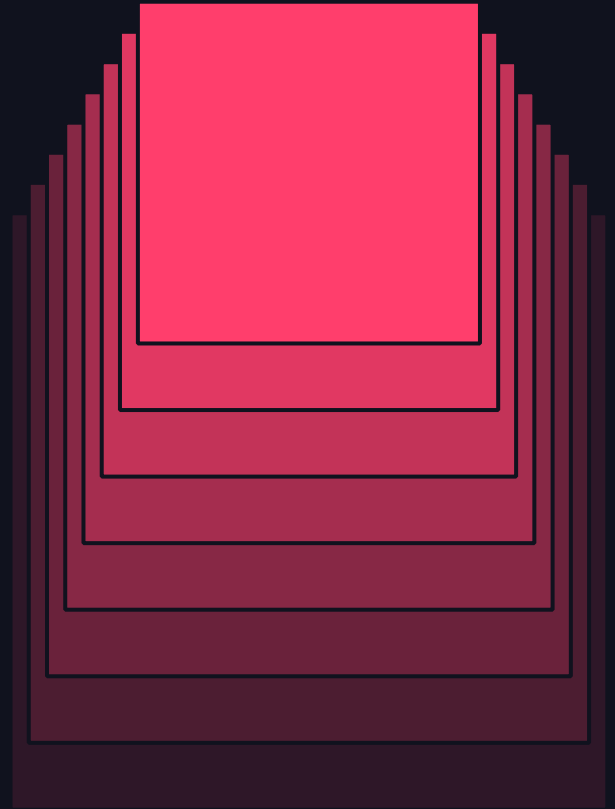


DATA DRIVEN OPERATIONAL INSIGHT

Logan Carlson - Kwik Trip
Siddhesh Pore - Databricks



About Speakers

Logan Carlson

Data Engineer, Kwik Trip

Data Engineering, Analytics and ML



Siddhesh Pore

Solutions Architect, Databricks

Retail and consumer goods



Agenda

What we are talking today

- What is Kwik Trip?
- Kwik Trip's Journey in Data Realm
- Use cases built on Databricks Platform
- Architecture
- Learning and future roadmap

Who is Kwik Trip?

WHO WE ARE

Serving Local Communities Across Six States



- Kwik Trip is a privately owned convenience store chain headquartered in La Crosse, WI.
- We operate more than 850 locations across Wisconsin, Minnesota, Illinois, Iowa, Upper Michigan, and South Dakota.
- Davenport, IA location was voted best truck stop in the nation by Trucker Path in 2024.

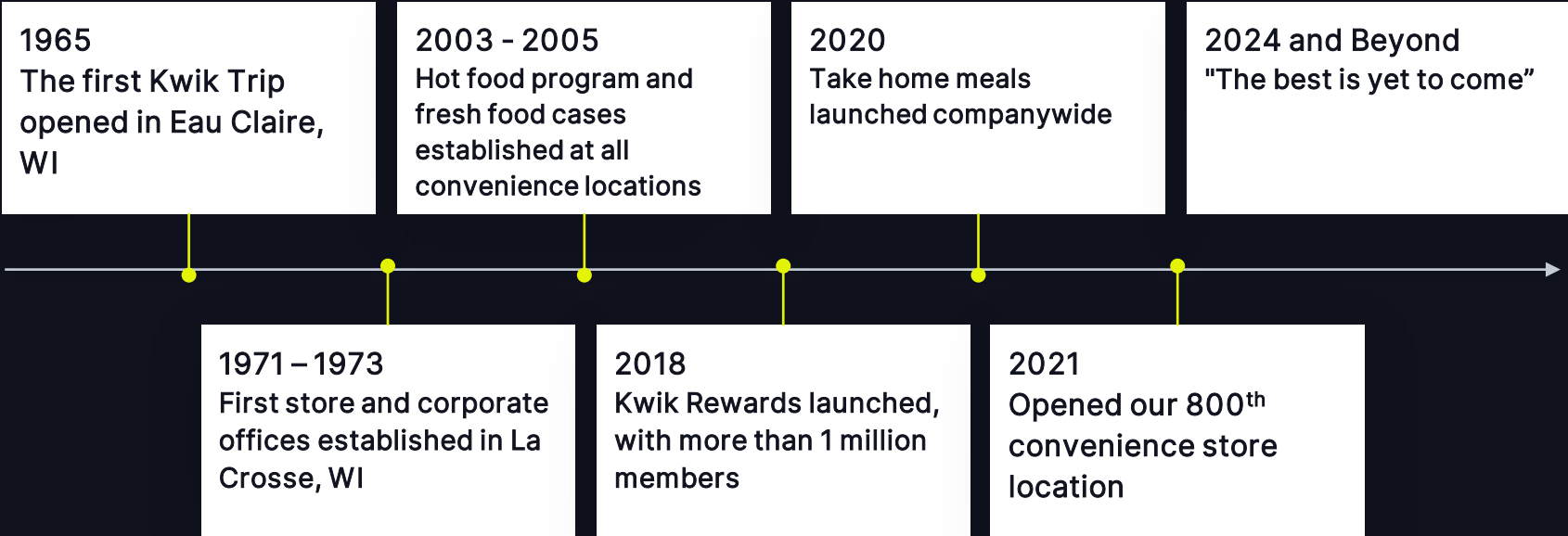
FRESH ISN'T FAST, IT'S A KWIK TRIP

A Vertically Integrated Fresh Food Operation

- Our entire food and beverage operation, including bakery, kitchens, dairy, distribution, and transportation divisions, are located at our 130-acre manufacturing campus in La Crosse, which provides each store with daily deliveries.
- We are known for offering fresh foods like produce, meat, hot food, and take-home meals in addition to typical convenience store items.

OUR STORY

Growing from Small Roots to a Midwest Fresh Food Leader



Our Databricks Journey Philosophy

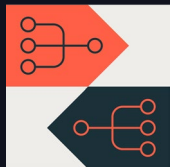
TRANSFORMING DATA ANALYTICS WITH A UNIFIED TEAM

Modernizing Data Capabilities While Maintaining Legacy Systems

- Data Services team was created in 2022 to bring together a disparate group of data analysts and engineers under one umbrella
- Needed to maintain a legacy data warehouse, integrations, and reporting while integrating Databricks into the tech stack
- Invested in upskilling the team to work with modern data tools and technologies

FOSTERING TRUST THROUGH TARGETED VALUE DELIVERY

Leveraging IT and Business Collaborations for Mutual Growth



Optimizing the Dev Workflow

- Enables development teams to focus on building high-quality applications
- Embrace agile methodologies for rapid iteration and adaptation
- Aligns IT and business objectives by delegating analytics to specialized teams

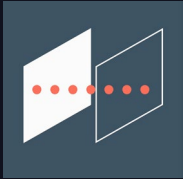
Building Trust through Data-Driven Capabilities

- Collaborate closely with business stakeholders to understand their strategic goals
- Develop clear, measurable success criteria aligned with business objectives
- Foster a culture of data literacy and evidence-based problem-solving

Our Streaming and ML Benefits

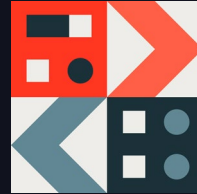
Streaming and ML on Databricks

Benefits for Kwik Trip



Streaming

- Fresher and faster insights for quicker and better business decisions
- Quick access to the current status of Fuel Pump and Store stock
- Scalable solution to grow from 5 test stores to 850 stores in production



Machine Learning

- Predict the usage and forecast demand supply
- Easily manage features and new data to train models for better predictions
- Improve team collaboration and ML lifecycle Management

Our Major Use Cases

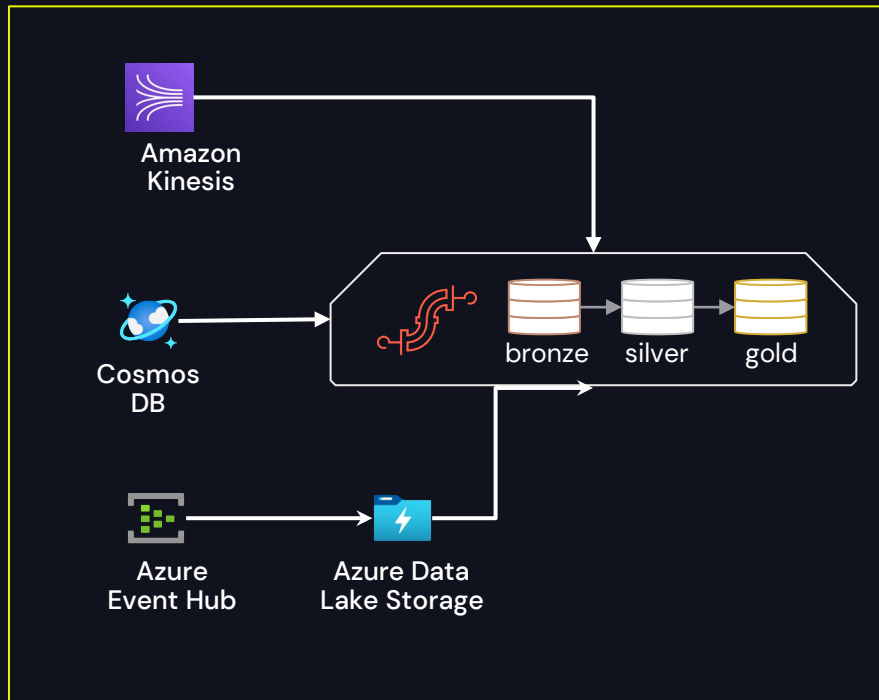
EMPOWERING DEVELOPERS BY OFFLOADING ANALYTICS

Fostering Trust and Productivity through Specialized Support

- Internal software teams developed applications to track:
 - Daily store checklists
 - IoT Device Monitoring
- Challenges faced by development teams:
 - Supporting app databases using a NoSQL service
 - Maintaining reporting databases using traditional relational databases in Azure
 - Keeping the two databases in sync proved challenging and costly

TRANSFORMING DATA REPORTING WITH DATABRICKS

Streamlining Analytics and Reducing Operational Burden

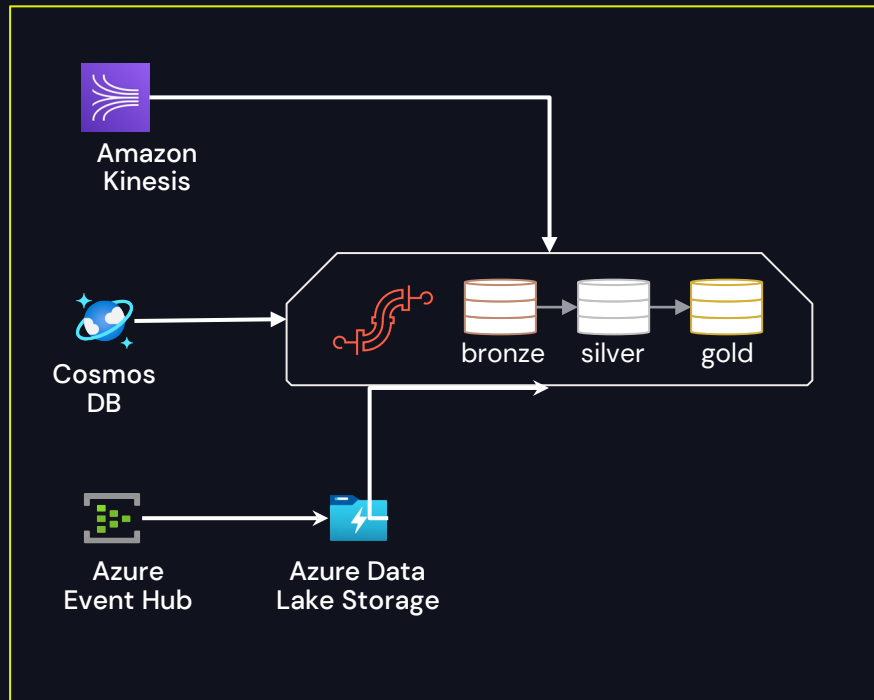


- Offloaded the burden of managing and maintaining reporting databases from the development teams
- Streamlined the data pipeline and reporting process using a unified Medallion architecture
- Improved data reliability and consistency by leveraging Databricks and Unity Catalog
- Reduced operational costs and complexity associated with managing multiple database systems

OPTIMIZING FUEL PUMP MONITORING THROUGH STREAMING

Integrating Real-Time Data Streams for Operational Visibility

- Store engineering team collaborated with fuel pump vendor to connect all locations to an AWS Kinesis data stream.
- Needed to find a way to get real-time data from Kinesis into our Azure environment to unlock the data's potential.

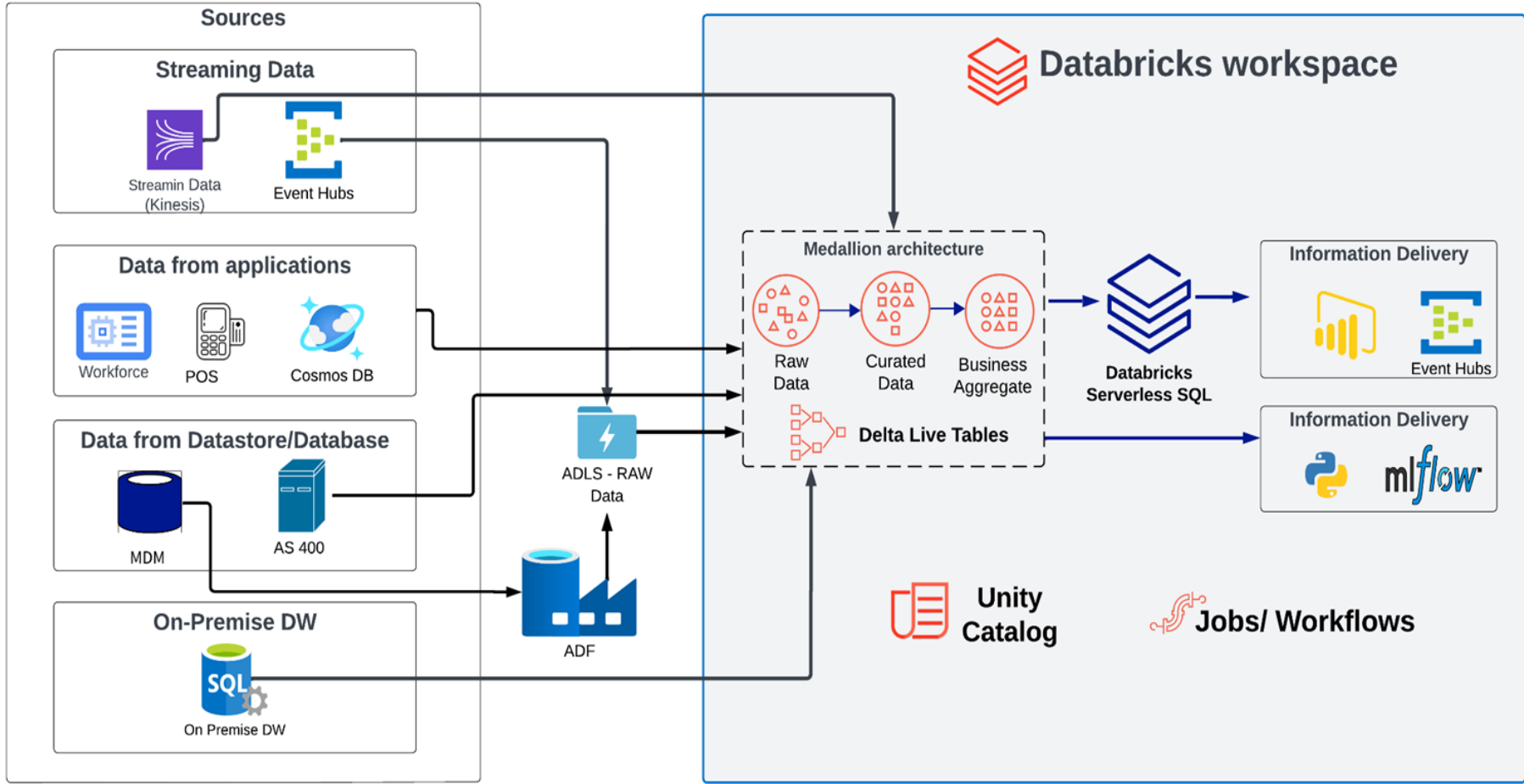


STREAMLINING FUEL PUMP MONITORING WITH DATABRICKS

Leveraging Spark Streaming for Real -Time Insights

- Utilized Spark Streaming and Databricks to provide a seamless streaming solution without the need to set up new resources in Azure.
- Leveraged Databricks to pass along messages to application team and save all data in Unity Catalog.
- Working with stakeholders to identify ML use cases for predictive maintenance to ensure guests are not unnecessarily delayed on their journeys.

Our Data Architecture



Our Learning

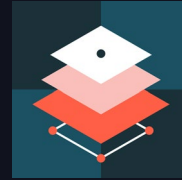
DELIVERING VALUE THROUGH ITERATIVE DEVELOPMENT

Balancing Short-Term Wins and Long-Term Vision



From Idealism to Action: Delivering Value Now

- Don't get lost in how things "should be" - focus on how you can deliver value to teams now
- Work on getting to where you need to be, but don't let the perfect be the enemy of the good
- Embrace iterative development and agile methodologies



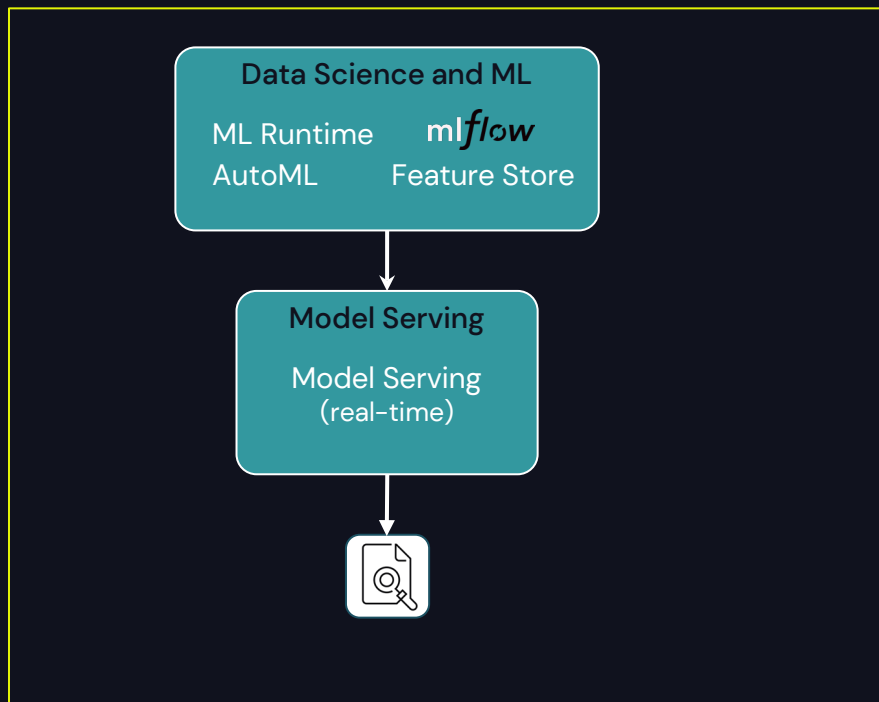
Aim Small, Miss Small - Aim Big, Miss Big

- Start with small, incremental improvements that can be quickly delivered
- Demonstrate value and build momentum through these quick wins
- Leverage the learnings from small-scale successes to inform your bigger, long-term goals

Our Future Use Cases

EMPOWERING BUSINESS WITH CUSTOM DATA PRODUCTS

Homegrown ML and Forecasting Solutions on Databricks



- Actively developing our own machine learning and forecasting data products fully integrated within the Databricks platform
- Leveraging open-source tools to build custom solutions for business stakeholders, reducing barriers between technical teams and business leaders

Open source
allows for
flexibility to
tailor solutions
to specific
needs.

Conclusion

Key learnings from our session

- Build solution governed by a common governing solution
- Do trials, quick POC and start implementation
- Save on TCO, use serverless
- Focus on building centralized solution to increase productivity
- Always follow best practices from beginning

Q&A



DATA+AI SUMMIT

