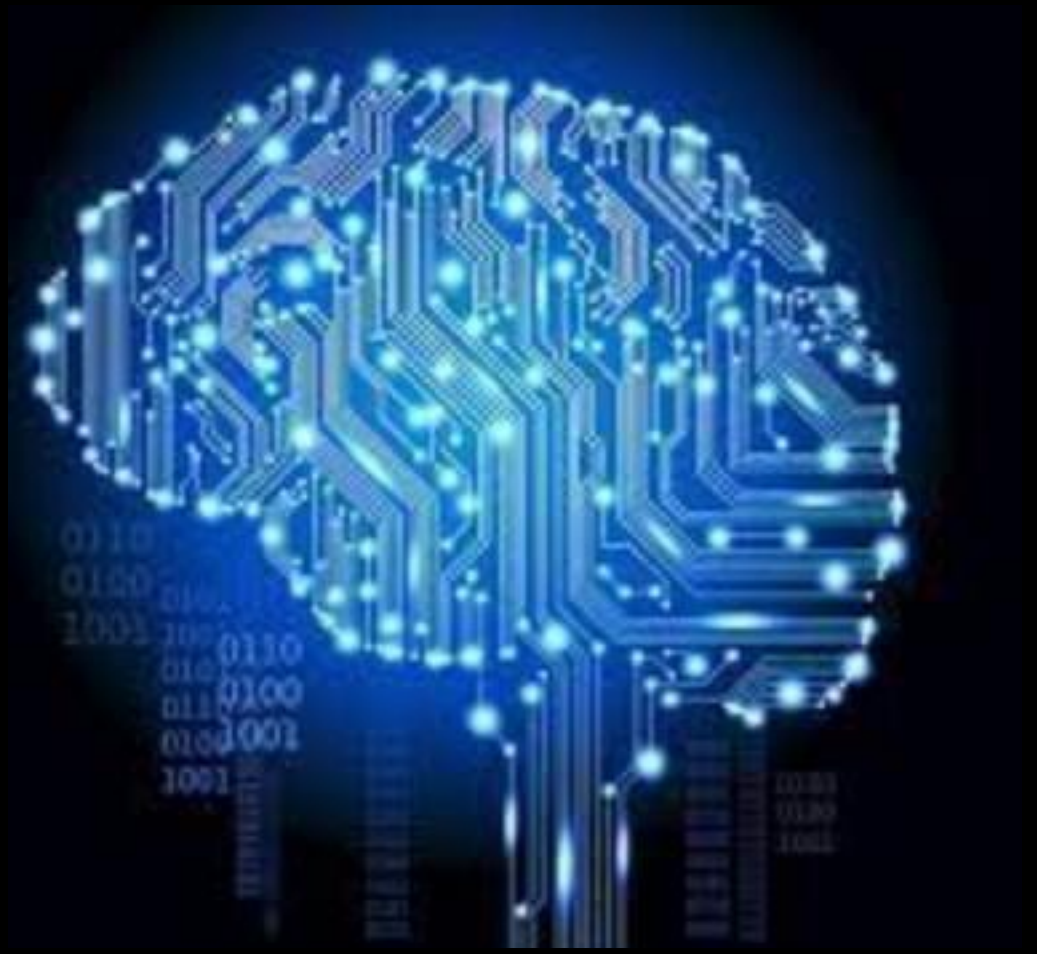
KANINI
Excellence Redefined

AI Driven Application Log Analytics



Log Analytics-Functions

Data Analysis

Analyze Api Activity for KPIs like:

- API Traffic
- Recency/Frequency of APIs
- Cost of API calls
- Response Times

Predictive Analysis

- Predict API Response Times
- Cluster Similar APIs (Unsupervised Learning)
- Recommend API for re-use
- Enables better API documentatio

Data Collection

- Collect Log activity via tools like Azure Application Insights
- Build a Data lake of Activity Data

Insights & Explainability

- Visualize API Activity
- Get Actionable Insights

Log Analyitcs - Use Cases

Use Case 1

POD Analysis

To find the highest failing microservice in the application .

Use Case 2

Exception Analysis

To analyse the exceptions in the application .

Use Case 3

User Analysis

To analyse the user journey in the application .

Use case 4

Trend Analysis

To predict the number of API calls,Users and Exceptions in the application .

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Business Use case

POD Analysis is done to track the high failing microservices available in the application.It helps to monitor and track the highest to least failing PODs along with their APIs,dependencies, and the exceptions

Solution

Identifying the failing PODs and clustering them into three categories as 1.critical PODs 2.unstable PODs 3.stable PODs based on different parameters such API state, oscillations across performance buckets,exception types and its outermessages.

Tech Stack &Techniques

Python,Azure,Power Bi, Machine learning algorithms-K means Clustering,Natural Language Processing -One shot classifier

Outcome

- Ability to track the Failing PODs along with their API's its dependencies, and their exceptions.
- Better graphical representation to replace the application map provided by Azure.

Benefits

PODs are designed to support multiple cooperating processes (as containers) that form a cohesive unit of service. Tracking the highest failing PODs enables one to monitor and rectify the issues occuring in that POD.

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Business Use case

Exception analysis produces a warning message when a parameter goes above or below a specified threshold. It helps us to monitor how many Exceptions occur in different PODs.

Solution

1. Monitor how many exceptions occur in a POD of a microservice.2.To know which POD is getting highest number of exceptions. 3.Classify the exceptions based on microservices.

Tech Stack &Techniques

Python- Pandas, Numpy, Azure, Power Bi.

Outcome

- In depth analysis of the exceptions .
- Distribution of execeptions across PODs and its Functionalities.
- Better graphical representation to illustarate the PODs and its Exceptions.

Benefits

Reports all exceptions to a centralized exception tracking service that aggregates and tracks exceptions and notifies developers.

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Business Use case

User analysis is to understand the user's movement through the microservice, mapping out each and every step the user takes—from entry point right through to the final interaction.

Solution

1.Identifying the user journey within a microservice. 2.To know which microservice the user has accessed the most. 3. How many APIs calls are made by a user in a microservice .

Tech Stack &Techniques

Python- Pandas, Numpy, Azure, Power Bi.

Outcome

Analyzing the individual user pattern like

- API calls made at different intervals of time.
- The commonly used microservice by the user.

Benefits

User analysis helps in understanding the user behaviour within a microservice. it enables the developer to know the frequently used microservice and reduce the traffic rate to minimize failures.

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Business Use case

Trend Analysis is a technique used to examine,identify a pattern and predict the API calls within a microservice based on current and historical data.Trend Analysis helps in taking valuable decisions like upscaling or downscaling a system

Solution

- Predict API Failures/ Time Outs in a microservice
- Predict API Response times in a microservice.
- Predict Users and number of execptions in a microservice.

Tech Stack &Techniques

Python,Azure,Power Bi, Deep learning algorithms-LSTM,Bi-LSTM,XG Boost Random Forest AR

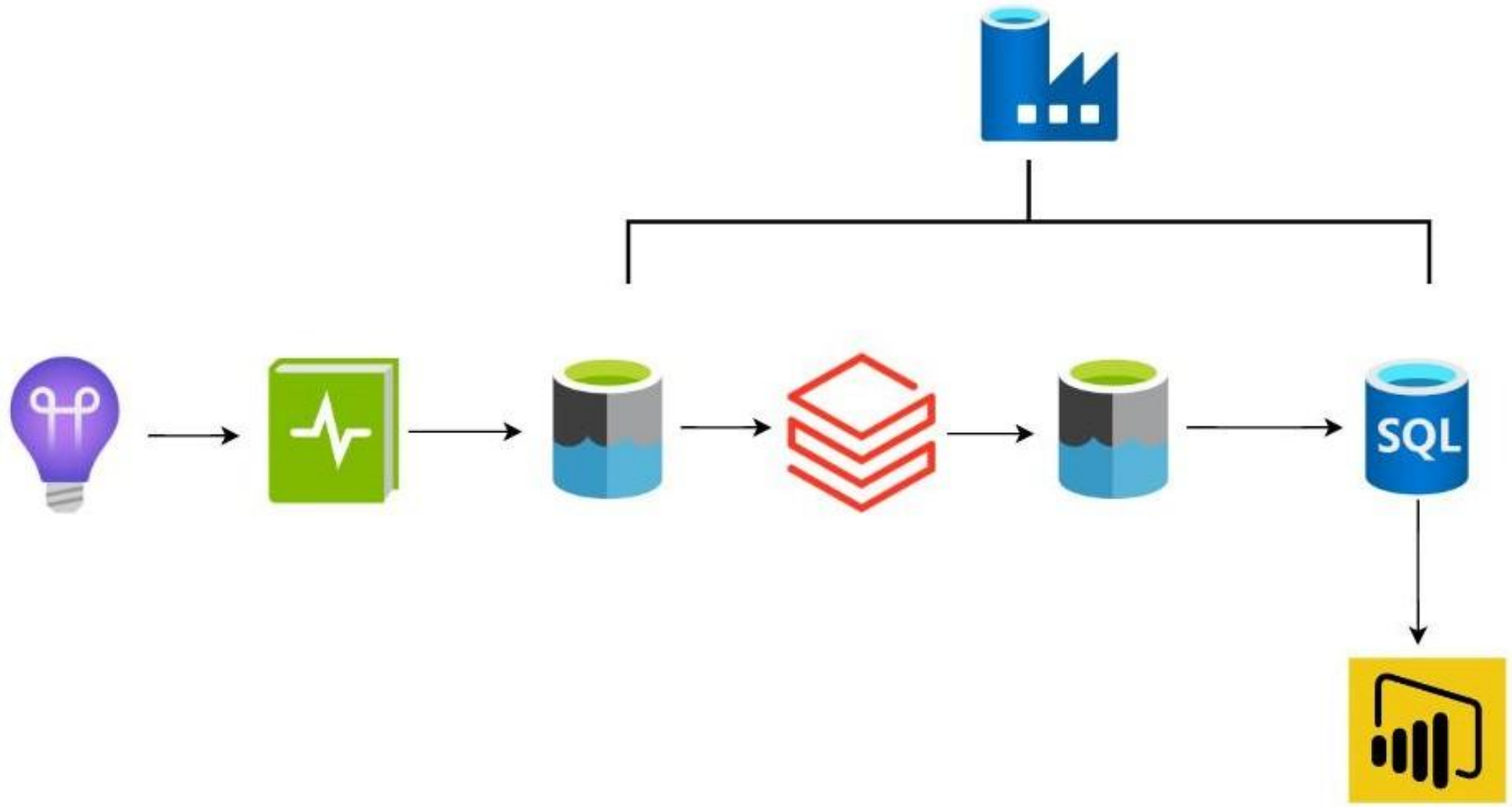
Outcome

- Ability to know the API load in next few hours/days.
- Helps in decision making.
- Find the relationship between user and functionality.

Benefits

Trend analysis helps in scaling the microservice inorder to reduce the failure rate.It is valuable because it gives the ability to the developer to make informed decisions and develop data-driven strategies.

Architecture - Using Azure Databricks



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Thank You