



Uber Real-Time Streaming Platform

This project is a full real-time data streaming platform built on Azure to simulate and process Uber-like ride events.

It uses:

- Apache Kafka for real-time ingestion
 - Apache Spark Structured Streaming
 - Azure Databricks for analytics
 - Azure Blob Storage (Data Lake)
 - Terraform for Infrastructure as Code
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Architecture

Producers → Kafka → Spark Streaming → Azure Databricks → Azure Data Lake → Analytics



Cloud Infrastructure

All infrastructure is deployed using Terraform on Microsoft Azure:

- Virtual Network & Subnet
 - Kafka Virtual Machine
 - Azure Databricks Workspace
 - Azure Storage Account (Data Lake)
 - Network & Security configuration
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Project Structure

terraform/ → Infrastructure as Code

kafka/ → Kafka setup & producers

spark/ → Spark streaming & batch jobs

databricks/ → Databricks notebooks



How to Deploy

```
cd terraform
terraform init
terraform apply
```