

# AWS re:Invent

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ADM303

# Deploying a complete ML framework for real-time bidding

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# Introduction



# Common challenges in the AdTech industry



**Large volumes  
of data**

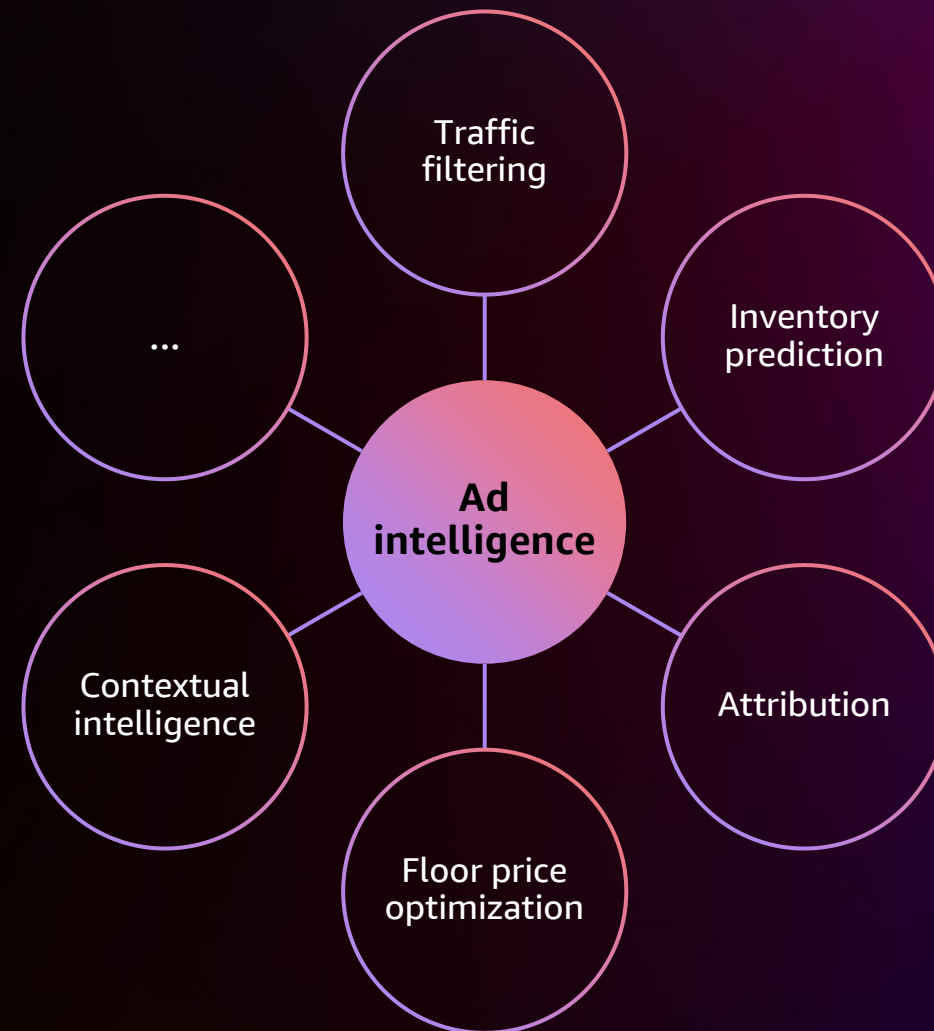


**Low  
latency**

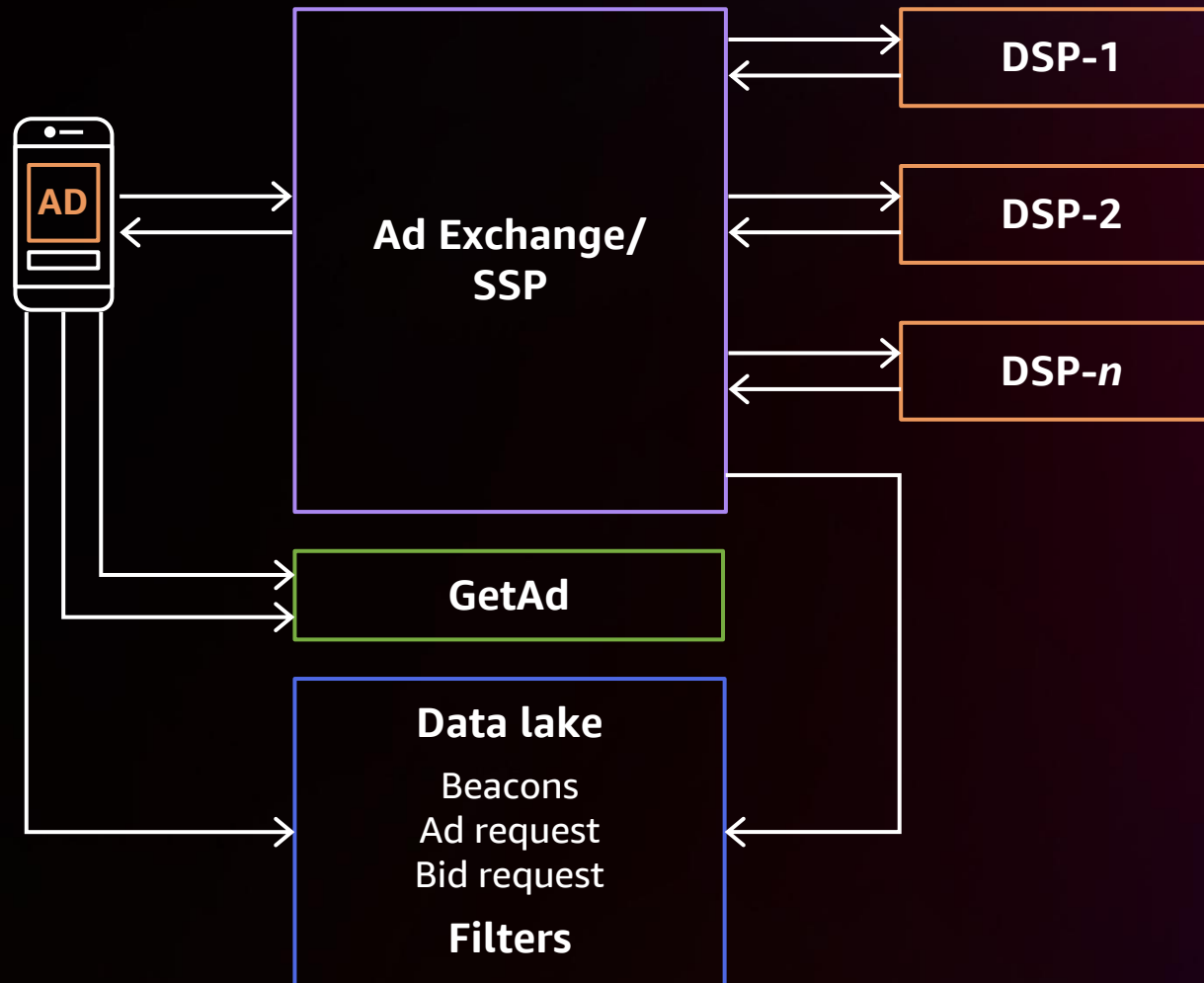


**Automatization**

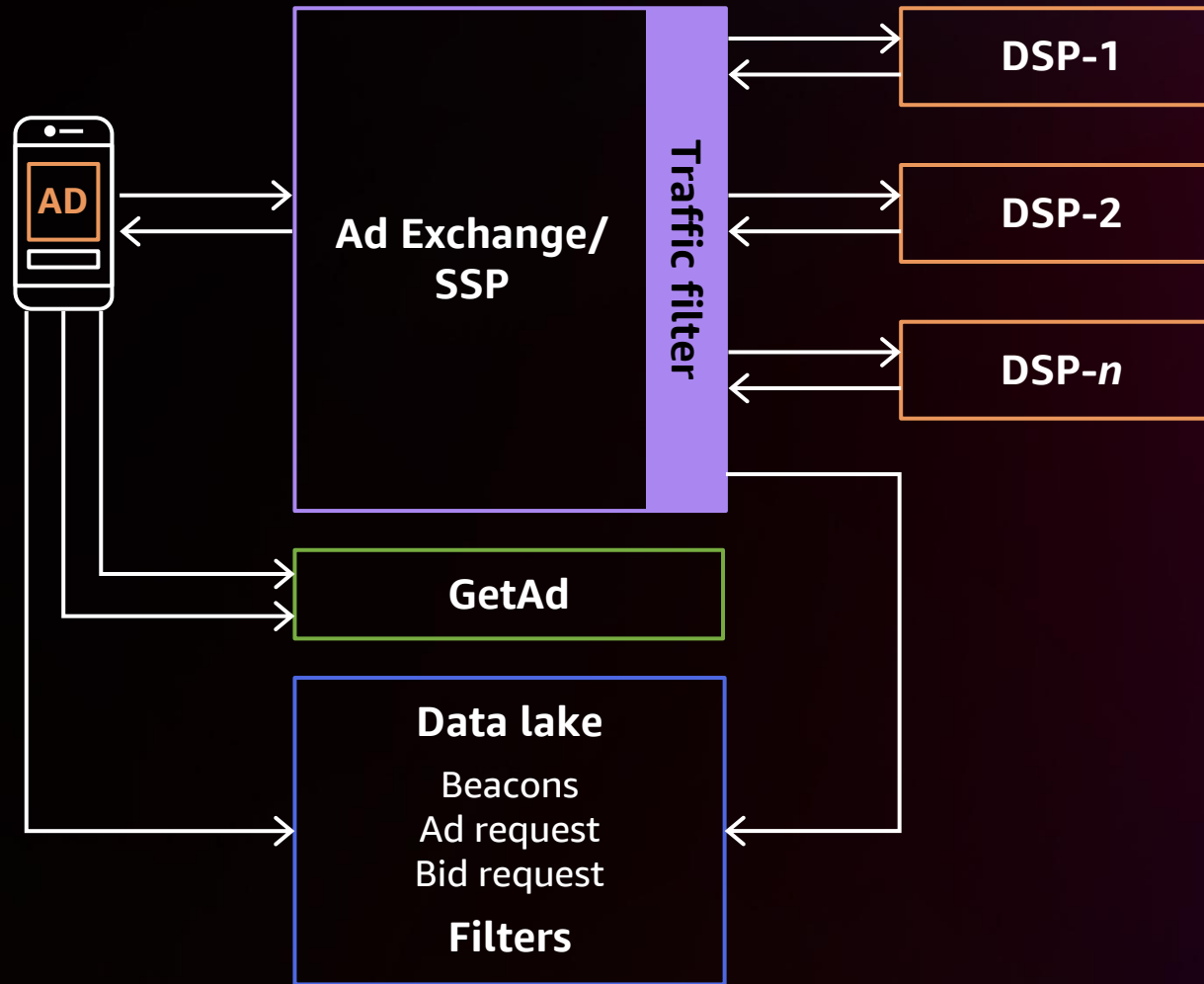
# ML use cases in AdTech



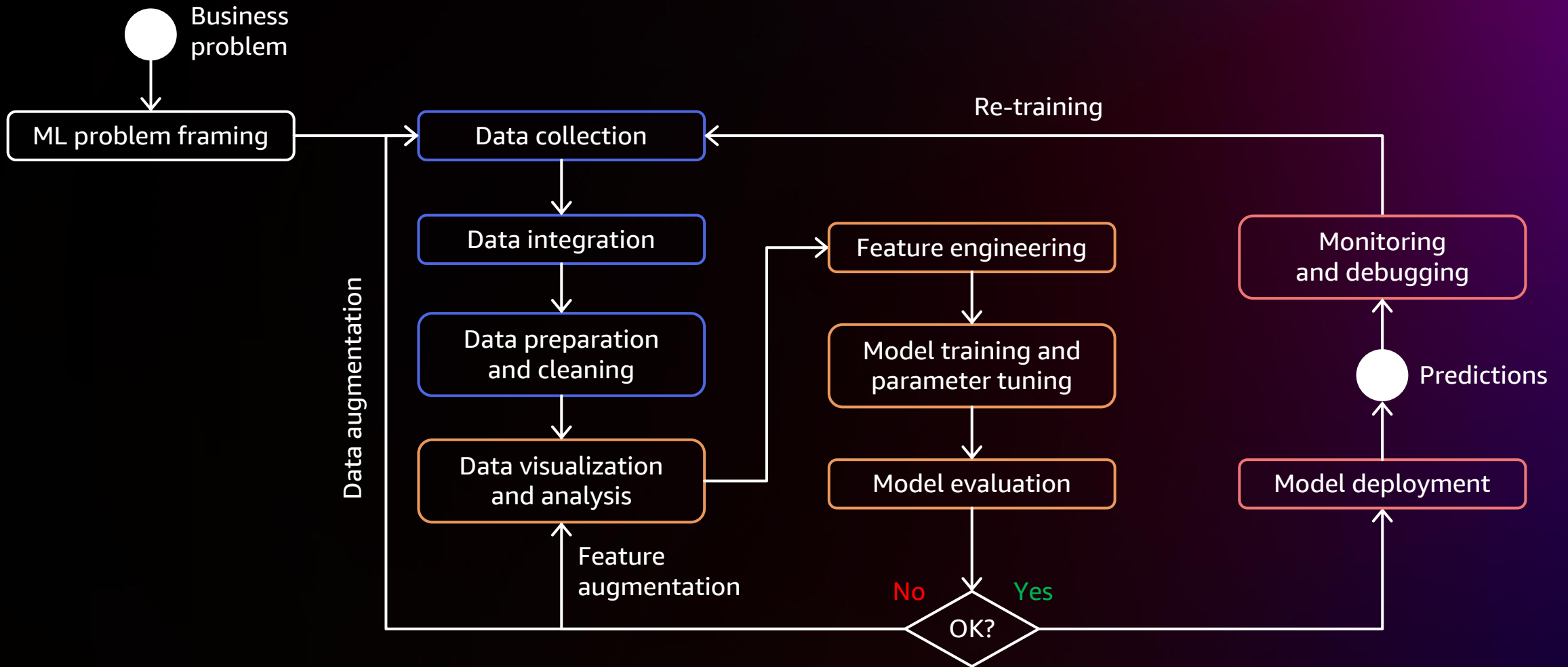
# Recap: real-time bidding (RTB)



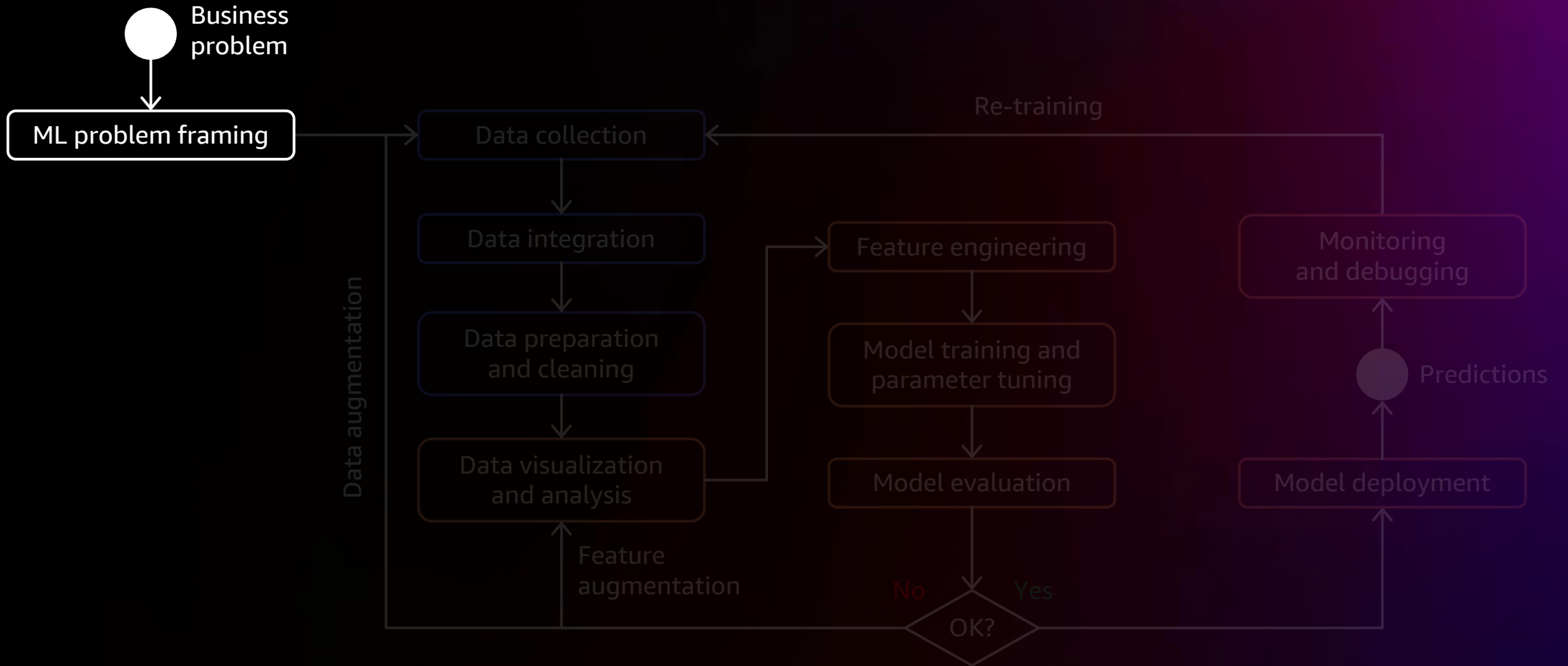
# Recap: traffic filtering



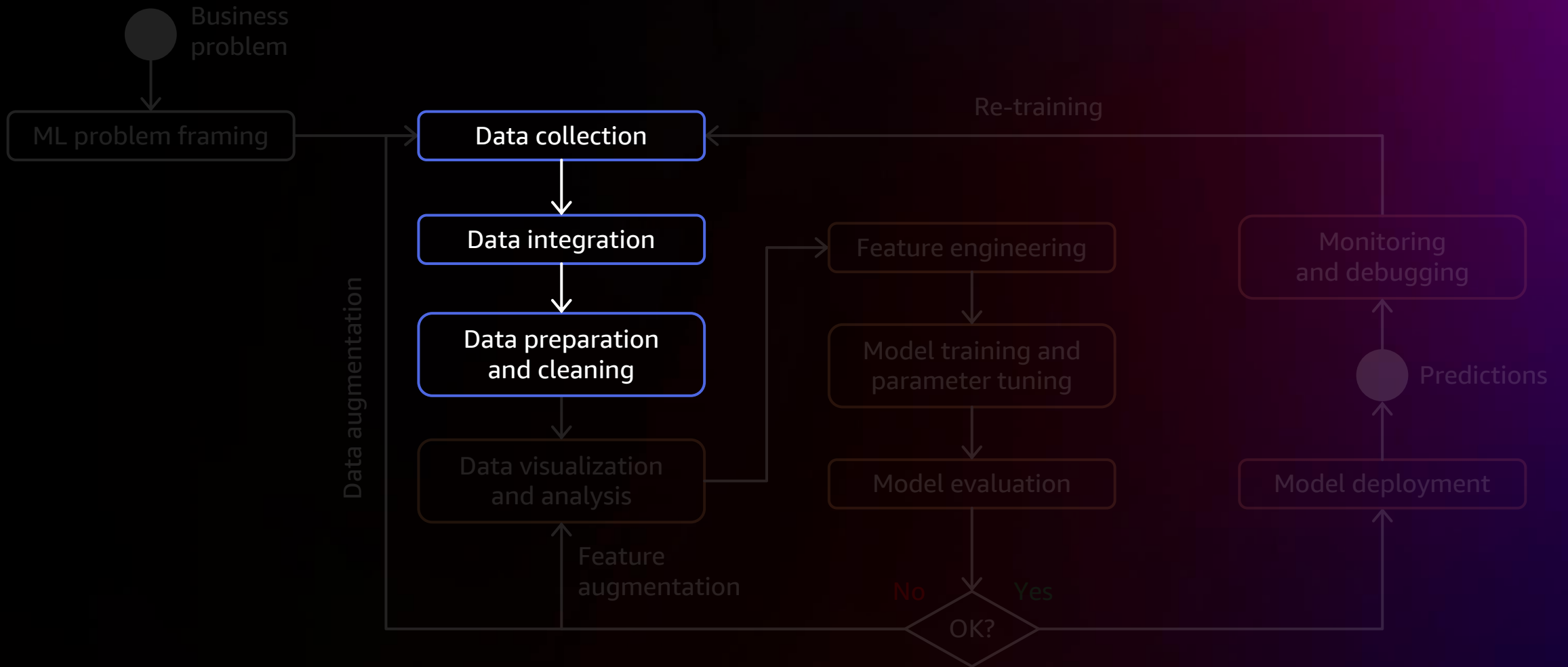
# Recap: machine learning process



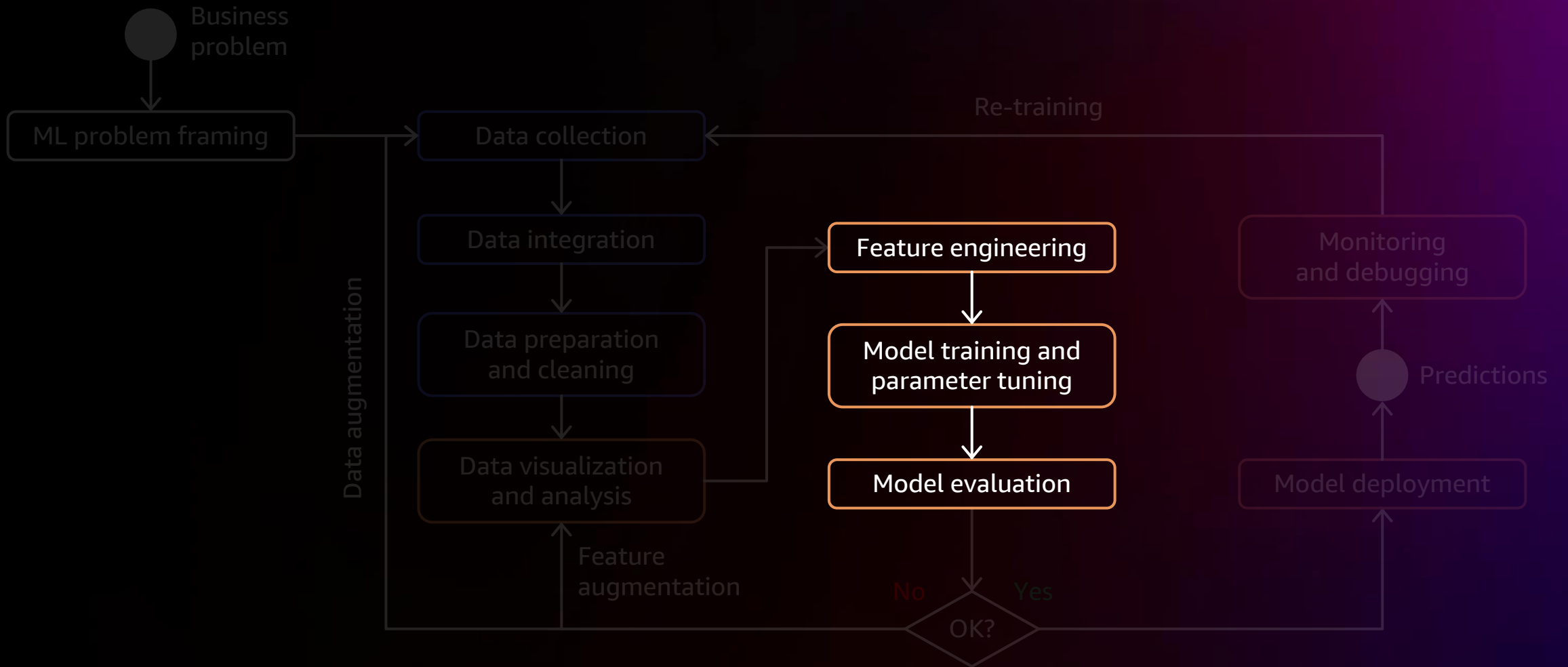
# Recap: machine learning process



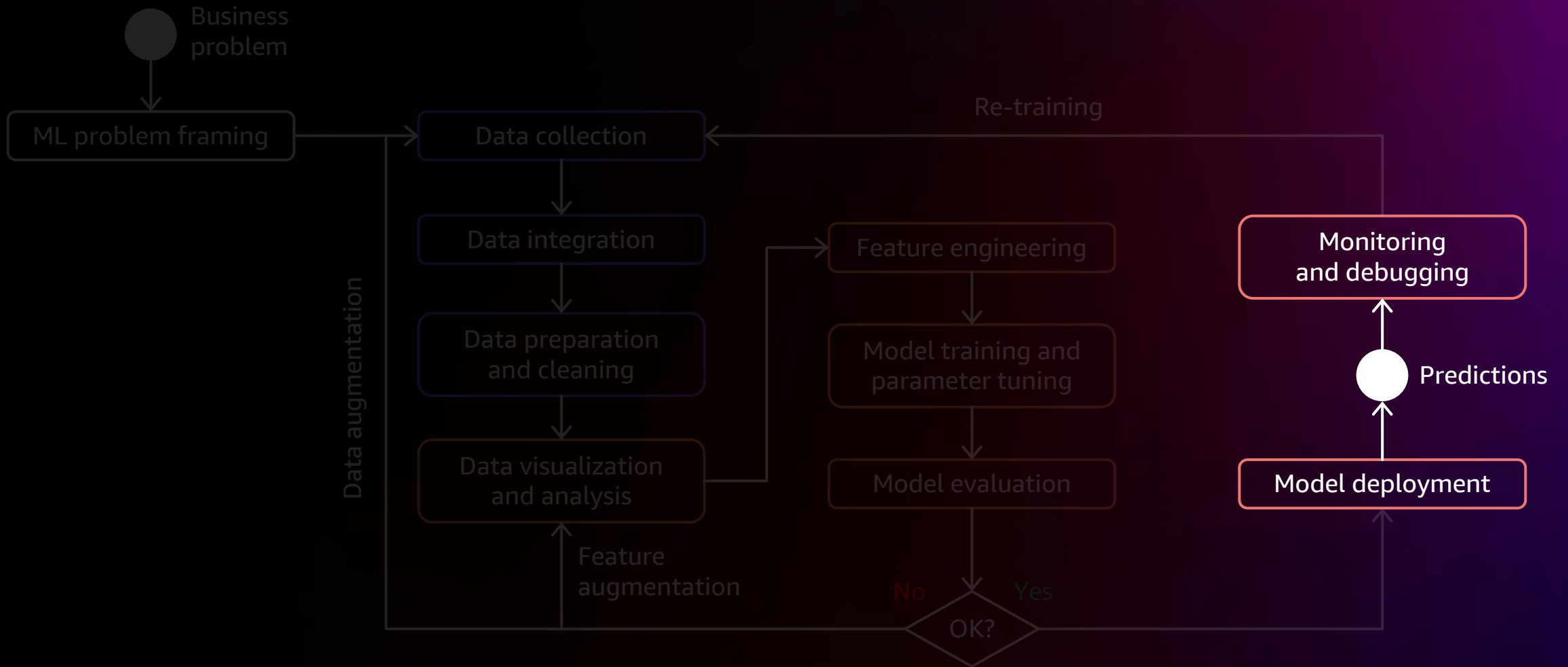
# Recap: machine learning process



# Recap: machine learning process



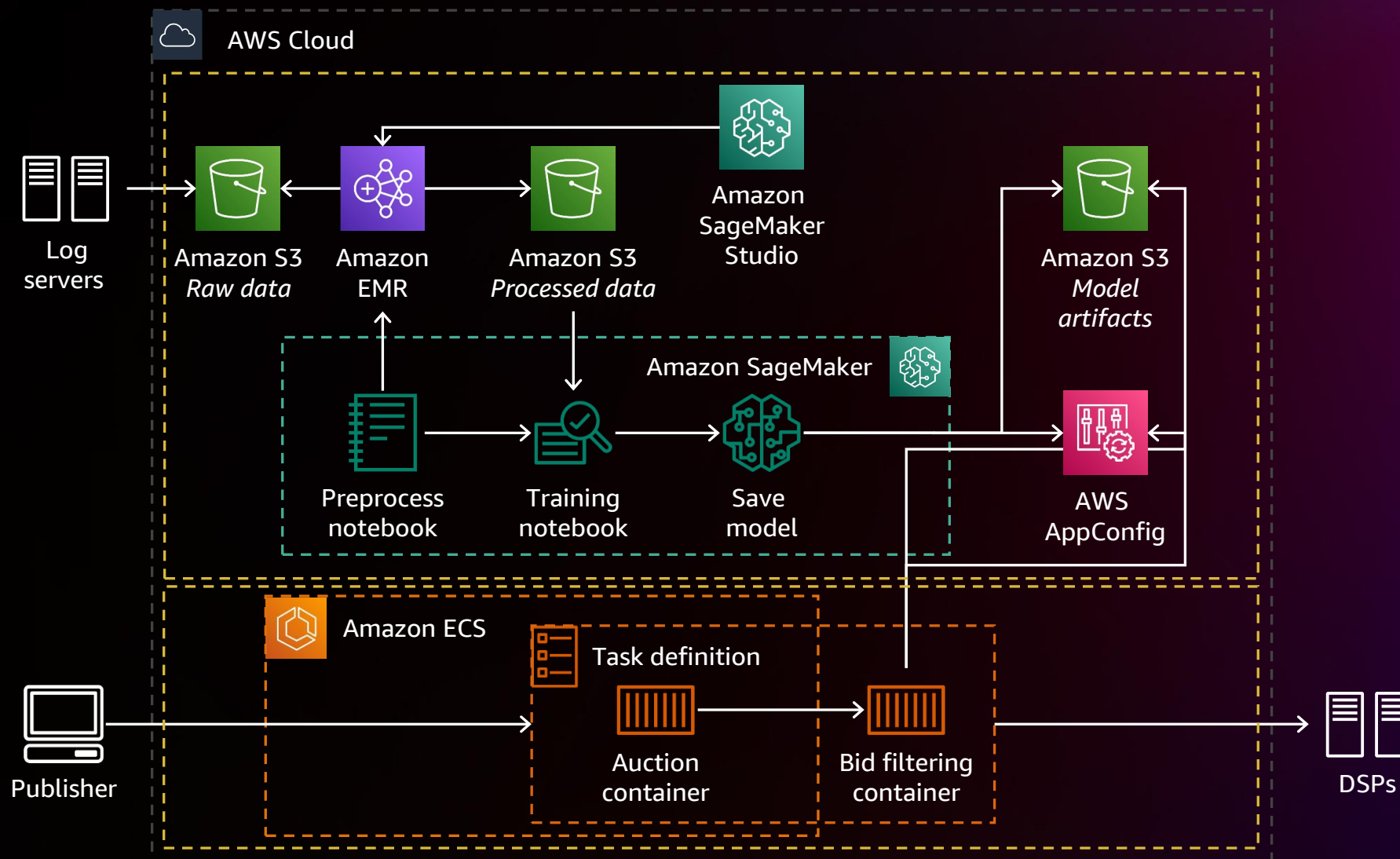
# Recap: machine learning process



# Design session



# Reference architecture



# Design session: what are the challenges?

## Overall scale/ performance

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- High volume of events to be stored and processed
- Low latency in bid flow

## Machine learning

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- Skills
- Automatization
- Accuracy
- Choice of algorithm

## Engineering

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- Model deployment
- Integration to application
- Data platform
- Infrastructure management

# Design session: what are the high-level components?

## Data pipeline



- Ingesting the data
- Processing the data
- Feature engineering

## ML pipeline



- Training models
- Evaluate models
- Experiment

## Inference



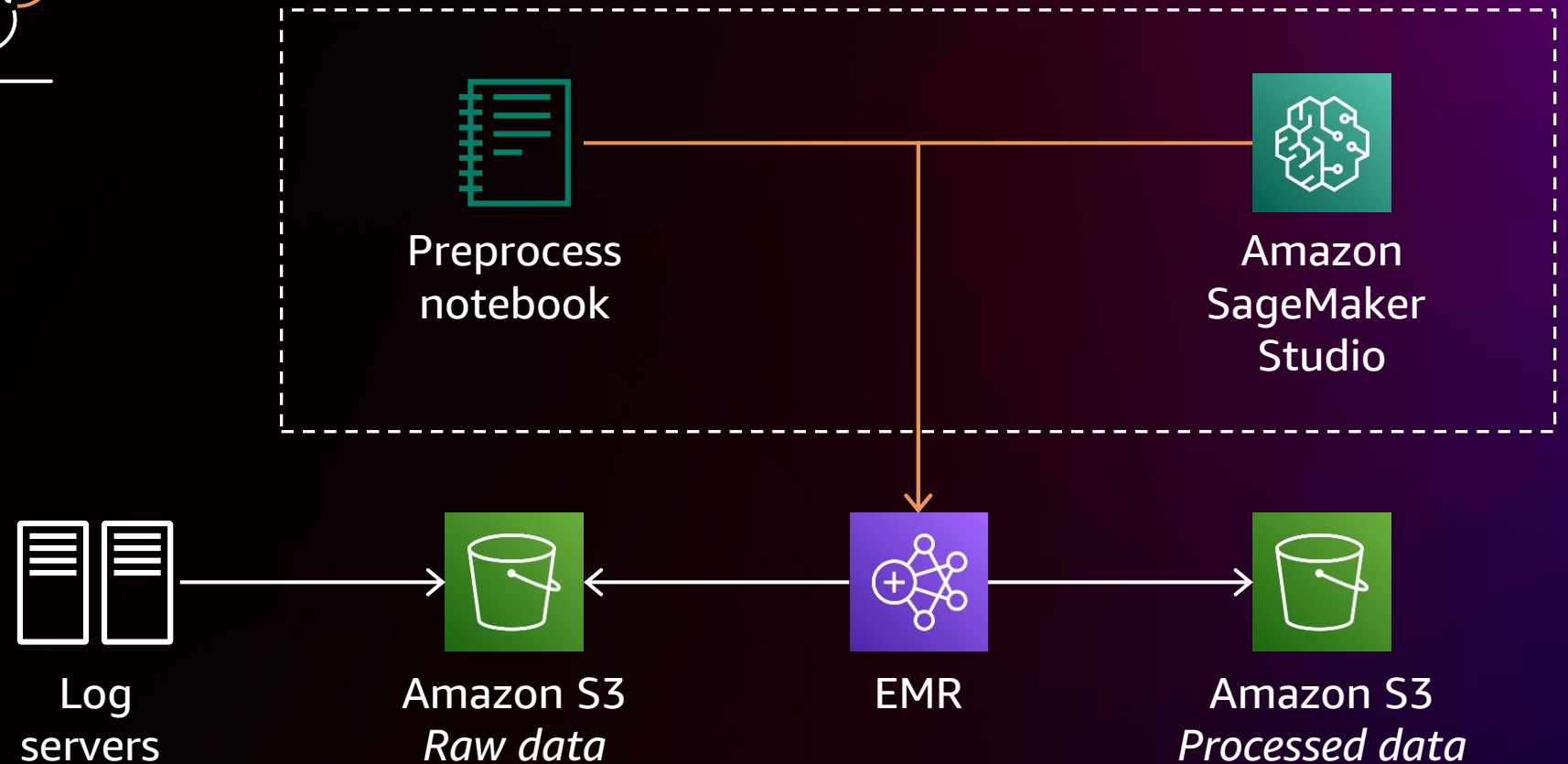
- Encapsulate model
- Integrate into existing application
- Work at high volume and low latency

# Design session: data pipeline

## Data pipeline



- Ingesting the data
- Processing the data
- Feature engineering

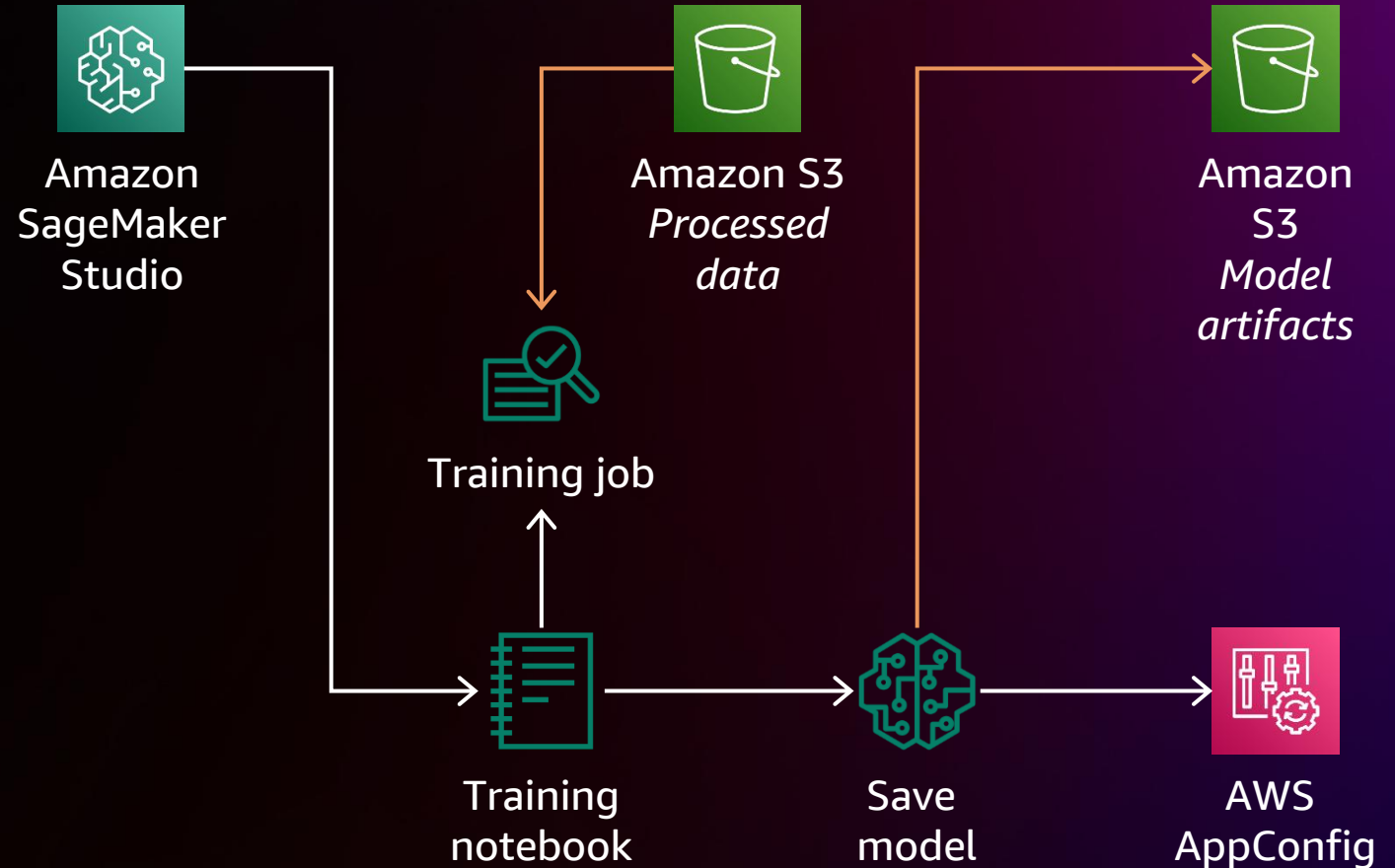


# Design session: ML pipeline

## ML pipeline



- Training models
- Evaluate models
- Experiment

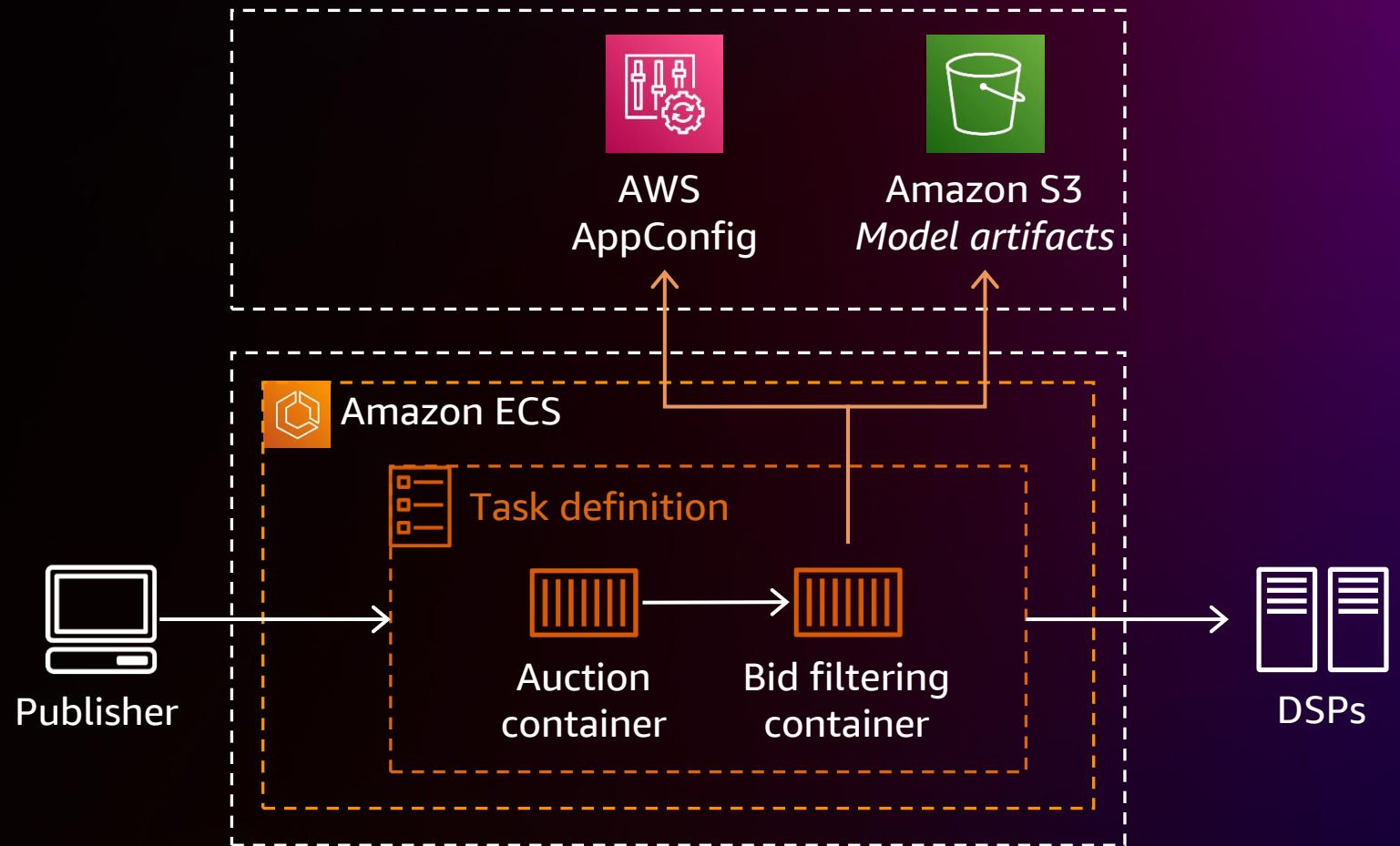


# Design session: inference

## Inference



- Encapsulate model
- Integrate into existing application
- Work at high volume and low latency



# Wrap-up

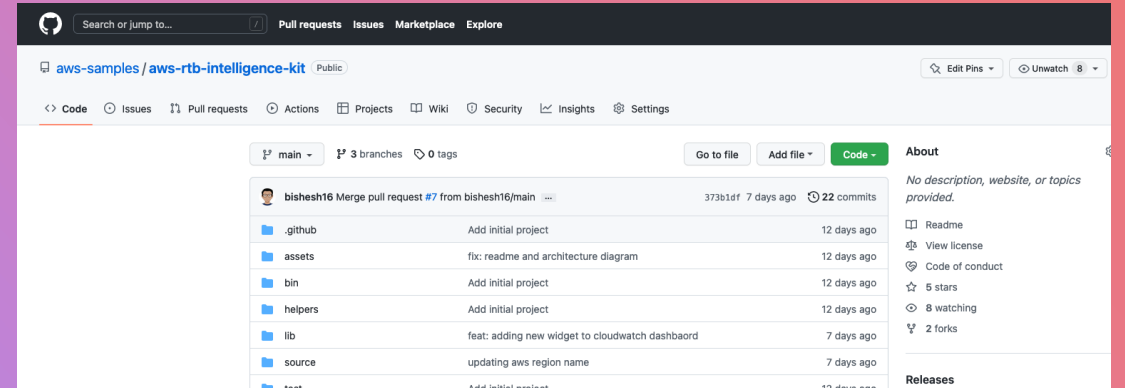


# RTB intelligence kit

START BUILDING YOUR OWN

## What is it?

- Easy to deploy CDK application
- Provides access to sample data
- Provides end-to-end solution of the ML workflow
- You can
  - Deploy the kit as a baseline solution
  - Modify and tinker with it toward your own use cases
- Implements traffic-filtering use case



<https://github.com/aws-samples/aws-rtb-intelligence-kit>



# Thank you!

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