AI Technology Overview

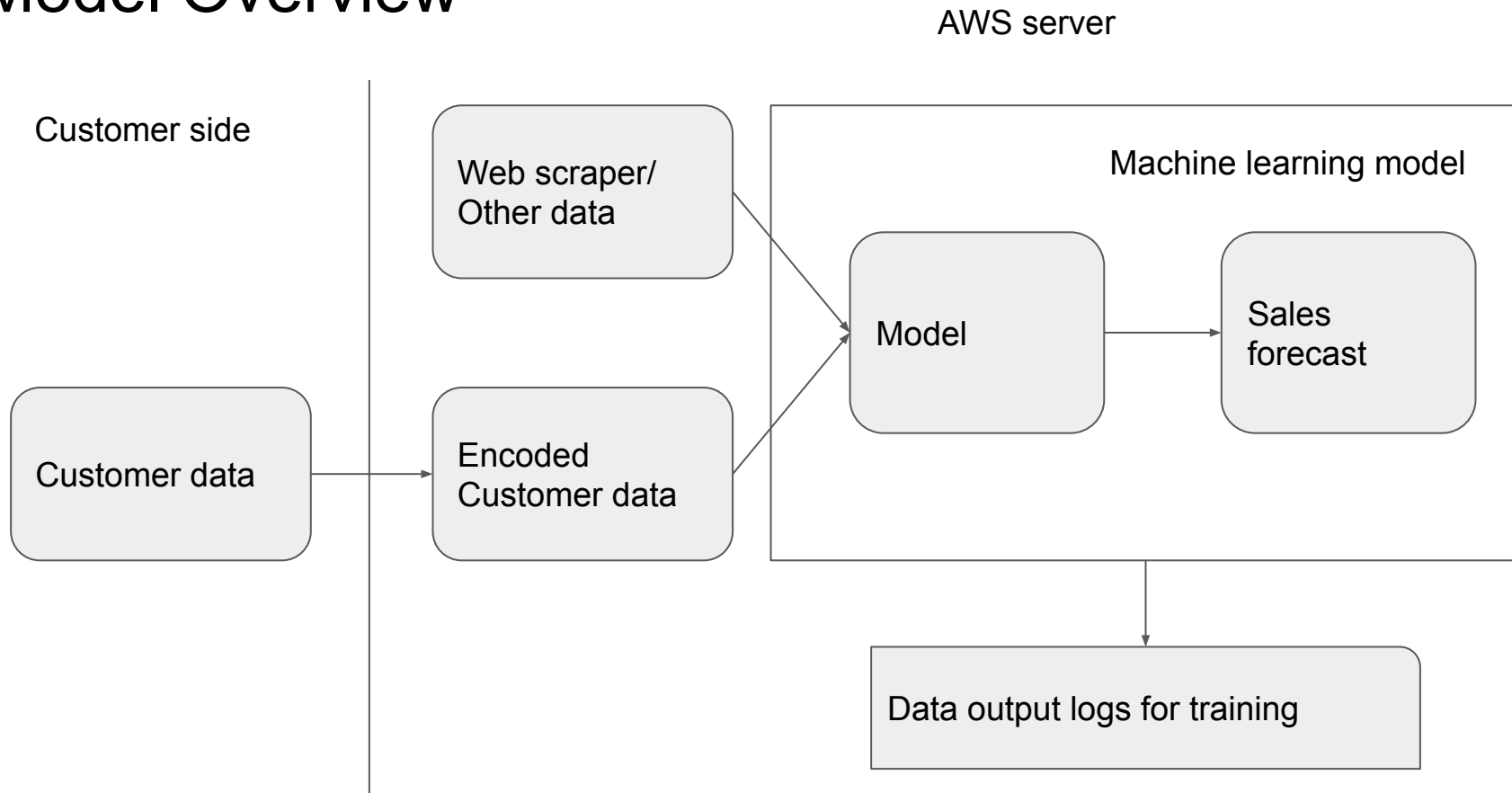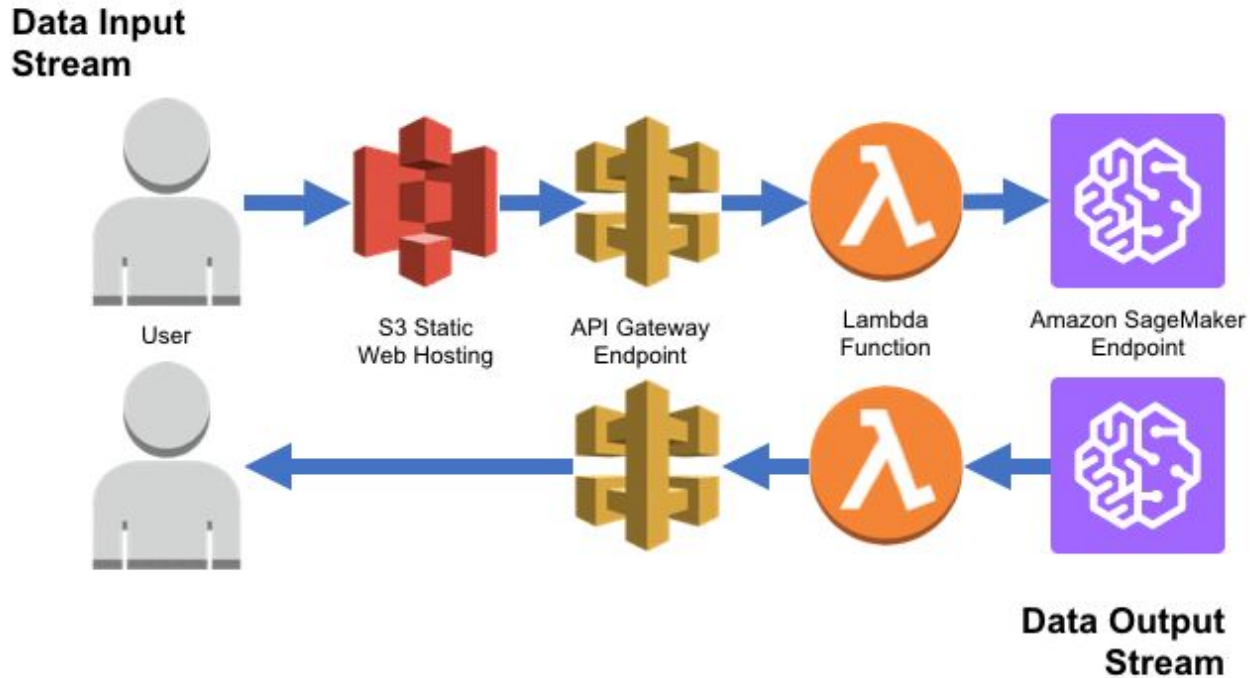## Tenxor

Project Scope

1. Forecast sales data from various data source

2. Continuously learn from newer inputs and more of them

3. Optimize model by hyperparameter optimization (continuously)
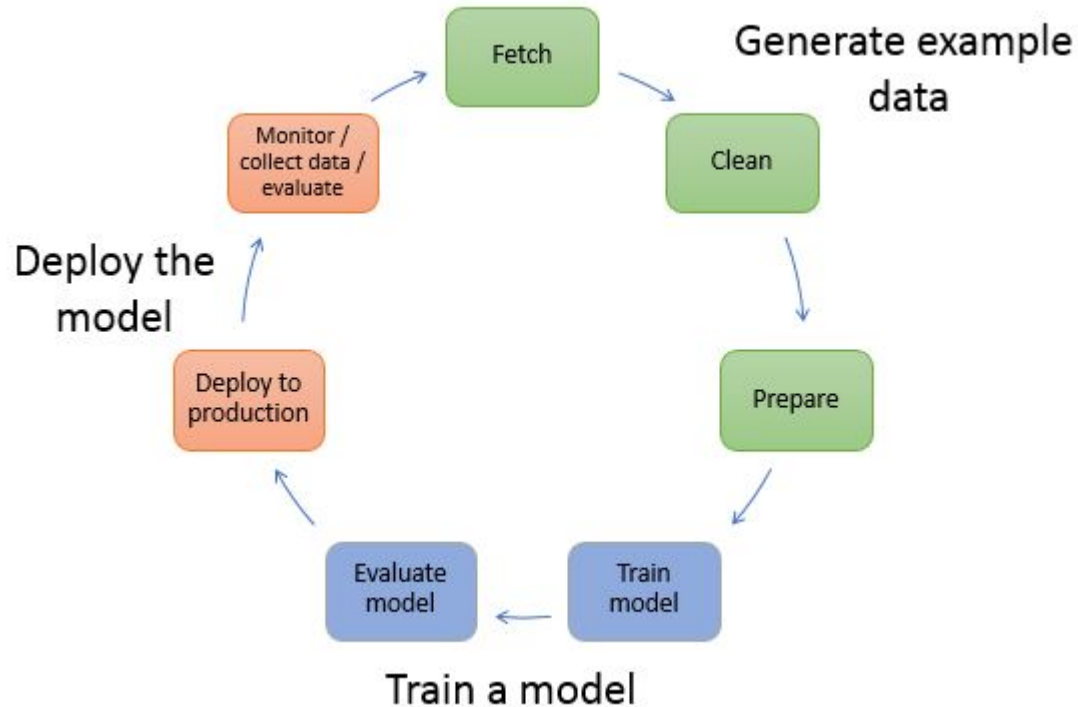
* scope #2-6 can be iterated with monthly fee.

Model Overview

AWS server

Customer side

Web scraper/
Other data

Machine learning model

Customer data

Encoded
Customer data

Model

Sales
forecast

Data output logs for training

User Pull data

Data Input Stream

User · S3 Static Web Hosting · API Gateway Endpoint · Lambda Function · Amazon SageMaker Endpoint

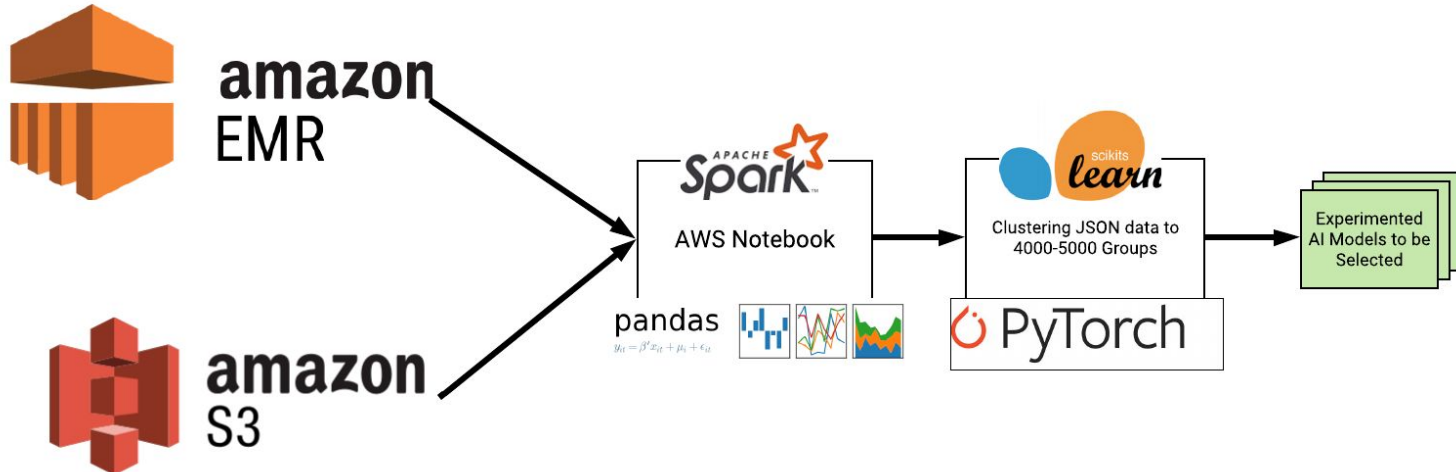**Data Output Stream**

Maintenance Cycle

Models accuracy

Monthly Competition and hyperparameter optimization
- LightGBM
- Neural Network (convolutional)
- RNN
- Linear NN
- XGBoost
- RandomForest
- Adaboost

Data infrastructure

1. Sample dataset provided by Customer stored in amazon S3 cluster.

2. We will do data wrangling using Spark on AWS platform (EMR).

3. Then connect to AWS using Python and train models using the scikits learn library (starting from minibatch K-means).

Running cost

The model in Example #1 is then deployed to production to three (3) ml.t2.medium for reliable multi-AZ hosting, and is regularly retrained once per week. The model receives 100MB of data per day, and inferences are 1/10 the size of the input data.

Hours per month	Training Instances	Hosting instances	Cost per hour	Total
4	ml.m4.4xlarge		$1.12	$4.48
24 * 31 * 3 = 2232		ml.t2.medium	$0.065	$145.08

Data In per Month - Hosting	Data Out per Month- Hosting	Cost per GB In or Out	Total
100MB * 31 = 3100MB		$0.016	$0.0496
	10MB * 31 = 310MB	$0.016	$0.00496

The sub-total for training and hosting = $149.56; The sub-total for 3100 MB of data processed In and 310MB of data processed Out for Hosting per month = $0.05456. **The Total for this workflow example would be $149.61 per month.**
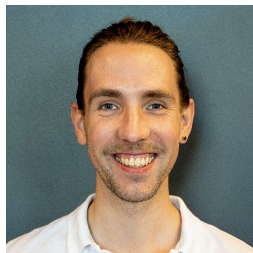
Team

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