

# Workshop Organizers

















#### https://github.com/xtreamsrl/amld22-mlops-on-aws

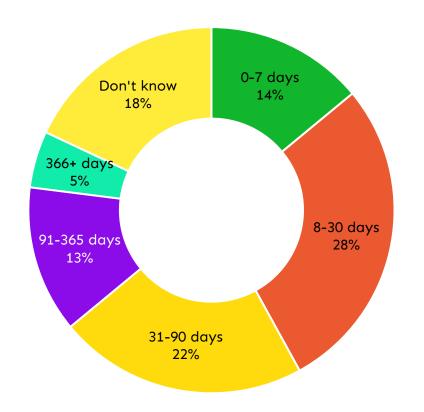






#### **ML Development is slow**

#### Time to ship a new model to production

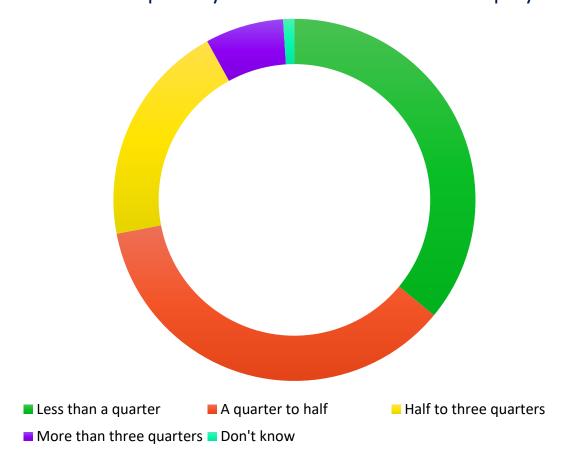






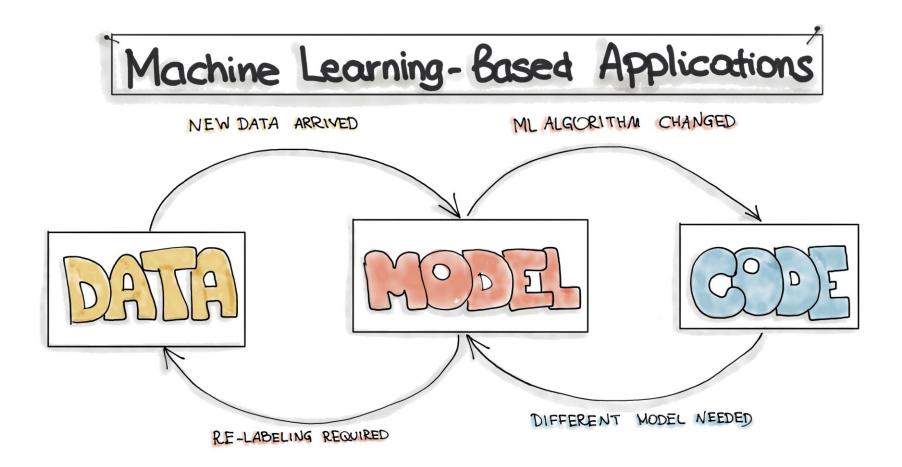
### ML Deployment is time-consuming

Share of time spent by data scientists on model deployment





#### **Updates cascade**







### The Machine Learning process

#### 3. Data Exploration

Explorative analysis

Data cleaning



### 1. Business Understanding

- Problem statement
- Evaluation metrics
- Literature review

#### 2. Data Gathering

- Source discovery
- Data preparation
- Quality assessment



#### 5. Evaluation

- Performance evaluation
- Time evaluation

#### 4. Modelling

- Feature engineering
- Model design
- Model implementation



#### 6. Deployment

- Architecture design
- Execution scheduling
- Performance tuning
- Integration



#### The Machine Learning process

#### 3. Data Quality

- Data cleaning
- Automated checks



### 1. Business Understanding

- Problem statement
- Evaluation metrics
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#### 5. Evaluation

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#### 4. Modelling

- Feature engineering
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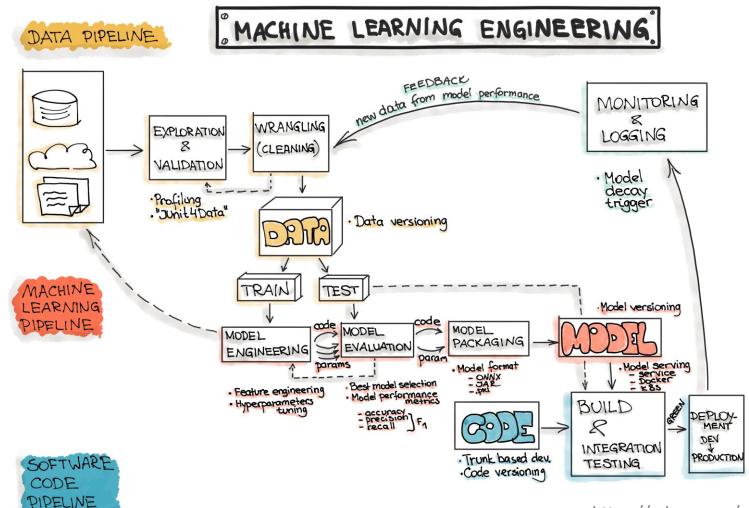
#### 6. Deployment

- Execution scheduling
- API generation
- Integration



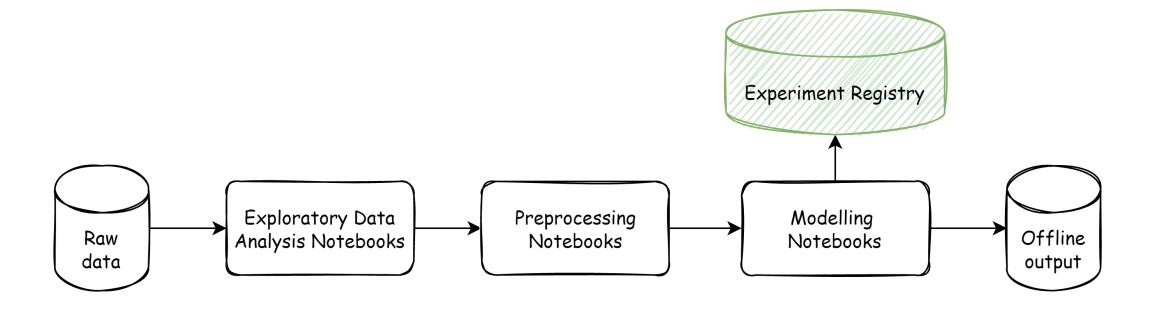


### The Machine Learning process



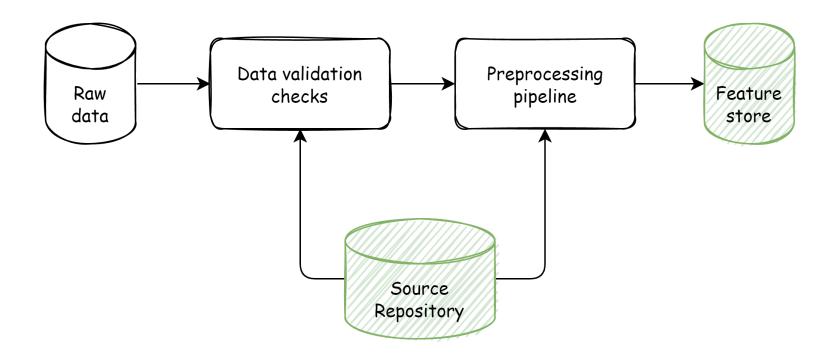


## Offline development



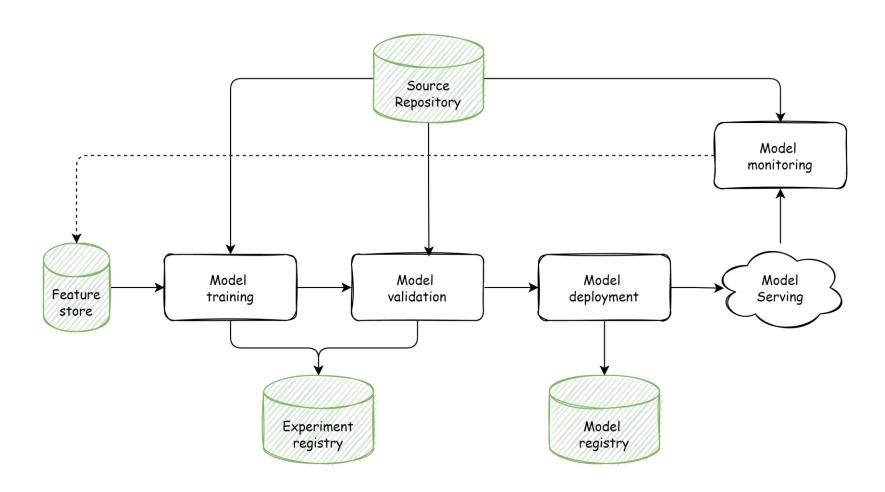


#### Automated data pre-processing





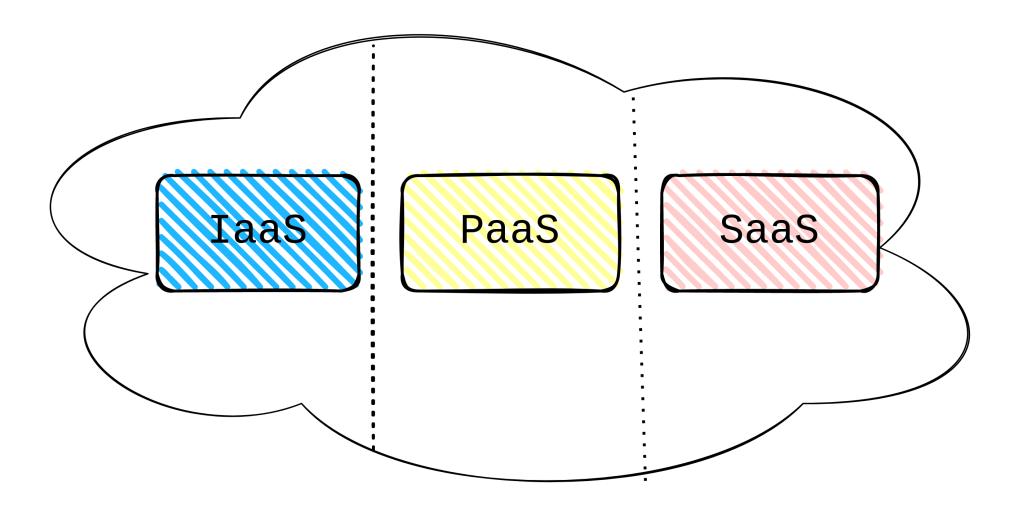
#### Automated model lifecycle







#### **AWS Cloud basics**





### Sagemaker Components





### Sagemaker Training

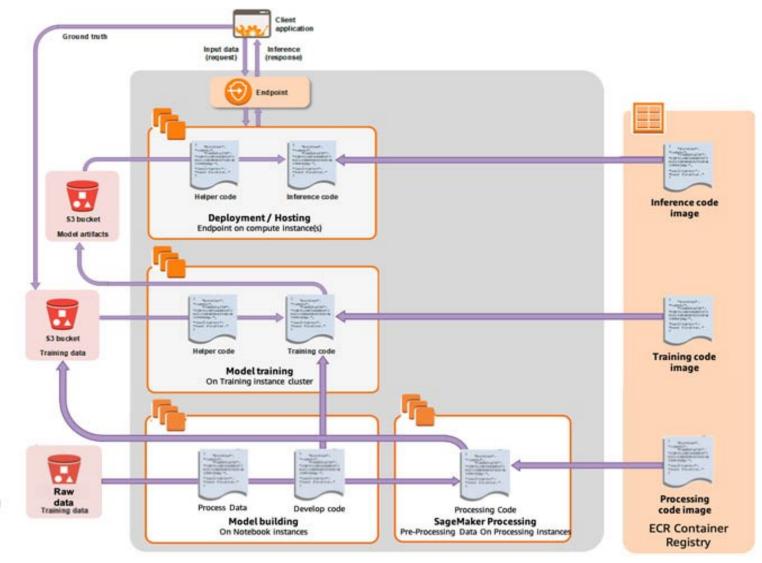
And then you deploy your model to production for realtime inference (or you use Batch Transform for batch inference\*)



Then you train and tune your model

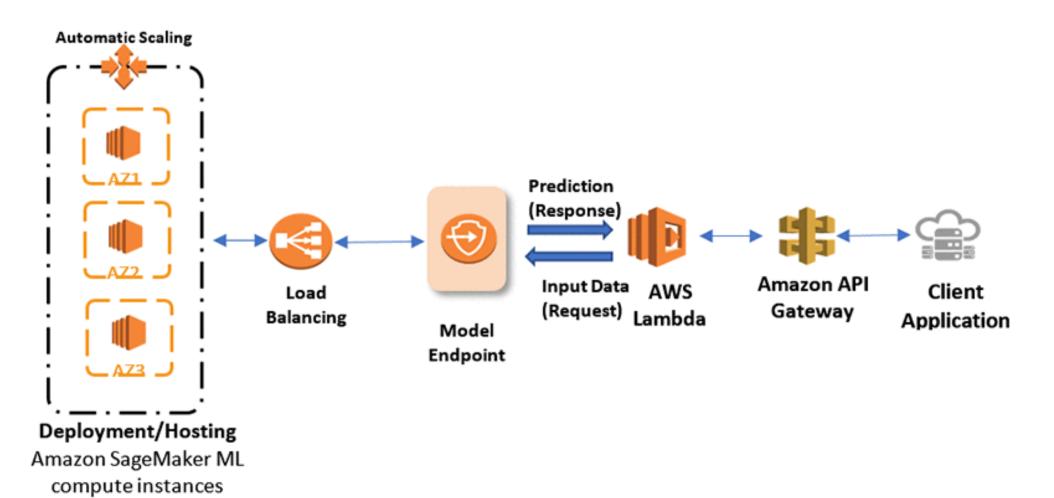


You start by building your model and processing raw data, developing your training data





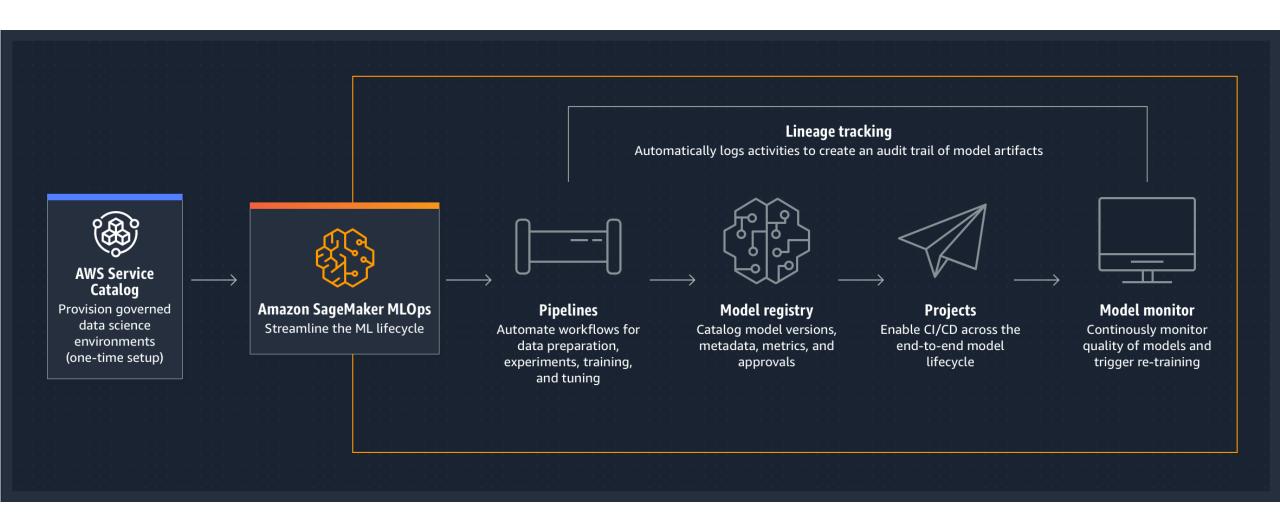
### Sagemaker Endpoint







### **AWS MLOps: Sagemaker Studio**





### Before we begin...



This is a simplified version of the reality – we have taken some shortcuts: we will highlight which ones along the way.



We will use very simple models; we will talk briefly how to improve them.



We will not cover all the features of SageMaker and AWS, often there are multiple ways of achieving the same goal. We will comment on this whenever possible.



