



INNOVATE

AI/ML EDITION

Opening Keynote

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Principal Developer Advocate, AI & Machine Learning
Amazon Web Services



More than one hundred thousand customers use AWS for machine learning



AI Services

Vision

Rekognition

Speech

Polly
Transcribe

Chatbots

Lex

Text

Comprehend
Translate
Textract

Business tools

Personalize
Forecast
Fraud Detector

Contact centers

Contact Lens
Connect Voice ID

Search

Kendra

Code + DevOps

CodeGuru
DevOps Guru

Industrial AI

Panorama Appliance and SDK, Monitron, Lookout for Equipment, Lookout for Vision

SAGEMAKER STUDIO IDE

Amazon SageMaker

Label data

Visualize in notebooks

Pick algorithm

Train models

Tune parameters

Deploy in production

Manage & monitor

ML frameworks & infrastructure

PyTorch, Apache MXNet, TensorFlow

AMIs & containers

GPUs

Inferentia

Elastic inference

FPGA

TENET 1

Provide firm foundations

Choice in frameworks



Choice in frameworks

92%
of cloud-based
TensorFlow runs on AWS

91%
of cloud-based
PyTorch runs on AWS

Nucleus Research, Deep Learning on AWS, 2020

Fastest training times on **MASK-RCNN** and **T5-3B**

Mask-RCNN

 TensorFlow

Fastest recorded time

**From 28 min to
6 min, 13 sec**

 PyTorch

Fastest recorded time

**From 27 min to
6 min, 45 sec**

T5-3B

 PyTorch

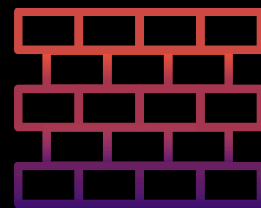
Fastest recorded time

**Development to trained
model in 5.9 days**

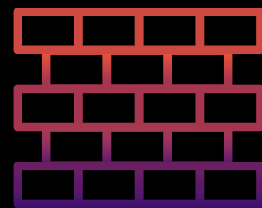
TENET 2

Create the shortest path to success

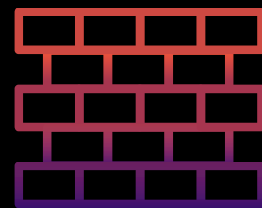
Machine learning development was a **complex and costly process**



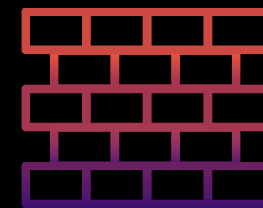
Collect and prepare
training data



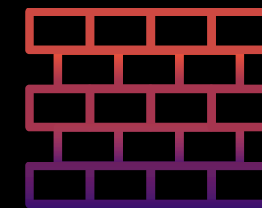
Choose and optimize your
ML algorithm



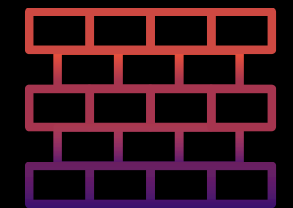
Set up and manage
environments
for training



Train and tune model
(trial and error)

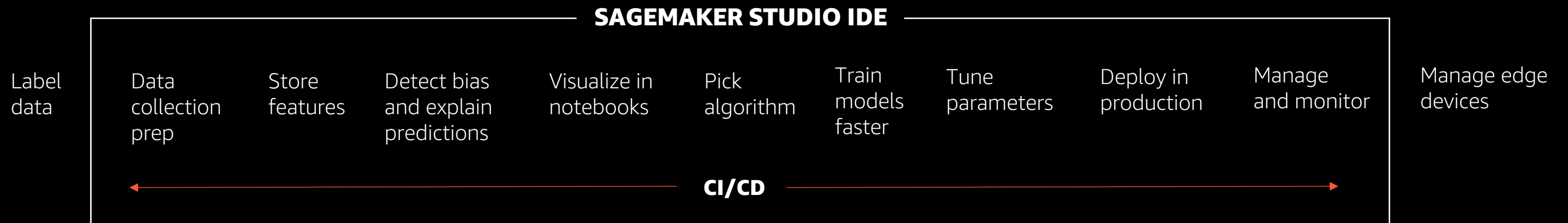


Deploy
model in
production



Scale and manage
the production
environment

Amazon SageMaker: **most complete end-to-end service for machine learning**



Tens of thousands of customers use **Amazon SageMaker**



TENET 3

Solve real business problems,
end-to-end

Machine learning is **reinventing virtually every industry**

MEDIA + ENTERTAINMENT



AUTOMOTIVE



FINANCE



INDUSTRIAL



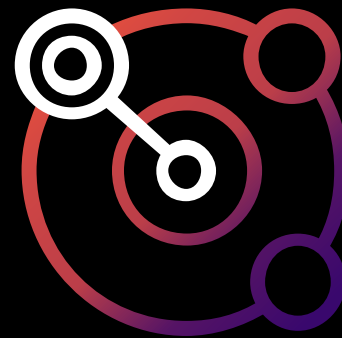
Improving industrial processes with machine learning



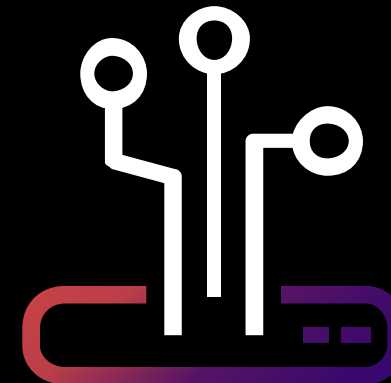
Amazon Monitron
An end-to-end solution
for equipment
monitoring



**Amazon Lookout for
Equipment**
Anomaly detection service
for industrial machinery



**Amazon Lookout for
Vision**
Spot product defects
using computer vision to
automate quality
inspection



**AWS Panorama
Appliance**
Add computer vision to
existing cameras



AWS Panorama SDK
Build new cameras that
run more sophisticated
computer vision models
at the edge

<https://ml.aws>

Agenda

I'm an application developer	I'm a data scientist	I'm a data engineer	I'm an MLOps engineer	I'm a technical decision maker	I'm a business decision maker
<p>Learn how to <u>quickly and easily add AI capabilities and ML models to your applications</u>. No need for expert skills: just call APIs or use off the shelf models, and get the job done!</p>	<p>Learn how to <u>build, train, and deploy high-quality models at any scale, without having to worry about infrastructure</u>. Focus on understanding the ML problem at hand, and on how to solve it using either existing algorithms or your own.</p>	<p>Learn how to <u>turn raw data into clean and expressive ML datasets, without having to manage any infrastructure</u>. Focus on exploring and enriching data coming from a variety of sources, in order to build high-quality models.</p>	<p>Learn how to <u>support data science and data engineering teams in the most efficient way</u>. Automate workflows end-to-end thanks to AWS and open source tools, and select the best infrastructure for each use case.</p>	<p>There's more to ML than training and deploying models, especially in large organizations. Learn about <u>AWS best practices for AI/ML</u>, which will help you make your ML workflows more efficient, resilient, and secure.</p>	<p>For all its technical complexity, the main appeal of AI/ML is how it helps organizations <u>innovate faster and improve business processes</u>. Learn from companies that have successfully done it, and how you can do the same!</p>

Thank you!

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 julsimon

<https://www.youtube.com/julienfr>

<https://julsimon.medium.com>