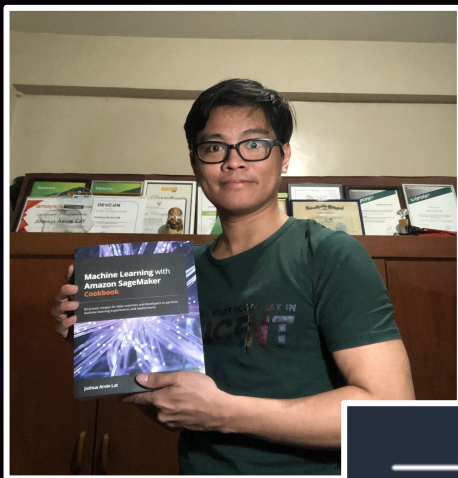




BUILDING MACHINE LEARNING-POWERED APPLICATIONS WITH JAVASCRIPT



JOSHUA ARVIN LAT



**Chief Technology Officer of
NuWorks Interactive Labs**



AWS Machine Learning Hero



Author of 📖
**Machine Learning with Amazon
SageMaker Cookbook**



Author of 📖
**Machine Learning Engineering on
AWS**



Machine Learning with Amazon SageMaker Cookbook

80 proven recipes for data scientists and developers to perform machine learning experiments and deployments

Joshua Arvin Lat



<packt>



1ST EDITION

Machine Learning Engineering on AWS

Building, Scaling, and Securing Machine Learning Systems
and MLOps Pipelines in Production

JOSHUA ARVIN LAT



MACHINE LEARNING

(A GENTLE INTRODUCTION)

Problems Solved by Machine Learning

- Anomaly Detection
- Product Recommendation
- Forecasting
- Image and Video Analysis
- Document Classification
- Language Translation
- Speech-to-Text Conversion
- Text-to-Speech Conversion

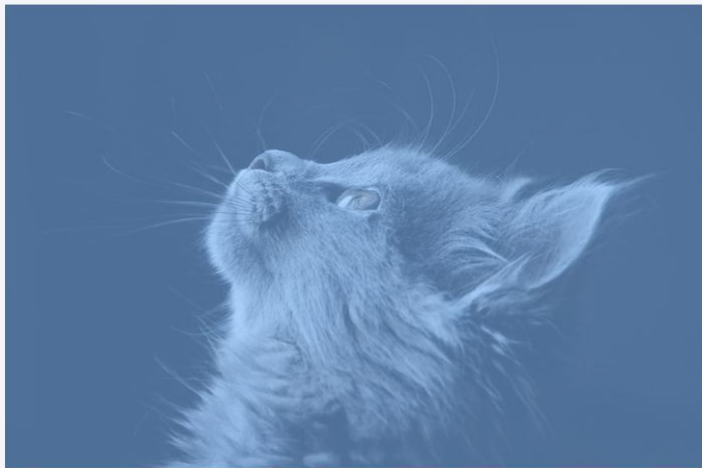
(and so on...)




CAT

OR

NOT CAT



- 
- Data Collection
 - Data Preparation and Cleaning
 - Data Visualization and Analysis
 - Feature Engineering
 - Model Training and Parameter Tuning
 - Model Evaluation
 - Model Deployment

WHY USE JAVASCRIPT FOR MACHINE LEARNING?

CAN WE BUILD A
MACHINE LEARNING-POWERED
APPLICATION USING

JAVASCRIPT

?

WHY USE



FOR MACHINE LEARNING?

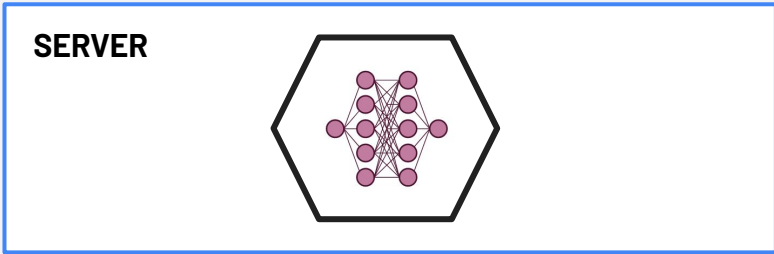
→ **TEAM IS ALREADY USING JAVASCRIPT HEAVILY**

→ **PERFORM MACHINE LEARNING INFERENCE ON THE BROWSER**

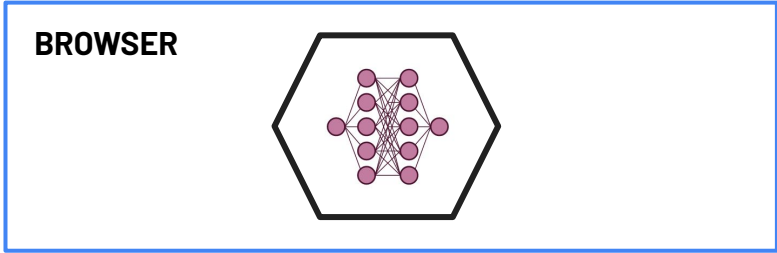
→ **AVOID THE NEED TO LEARN A NEW LANGUAGE**

MACHINE LEARNING IN THE BROWSER USING JAVASCRIPT

BROWSER



SERVER-SIDE INFERENCE



INFERENCE IN THE BROWSER

WHY USE



FOR MACHINE LEARNING?

→ **PERFORM MACHINE LEARNING INFERENCE ON THE BROWSER**

WORKS
OFFLINE

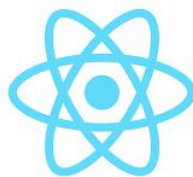
NO SERVERS
NEEDED

HELPS WITH
DATA PRIVACY

BETTER
LATENCY

**MACHINE LEARNING
LIBRARY**

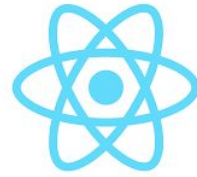
+



(and more...)



(and more...)



(and more...)

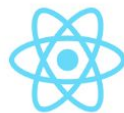


CONF42 JavaScript 2021

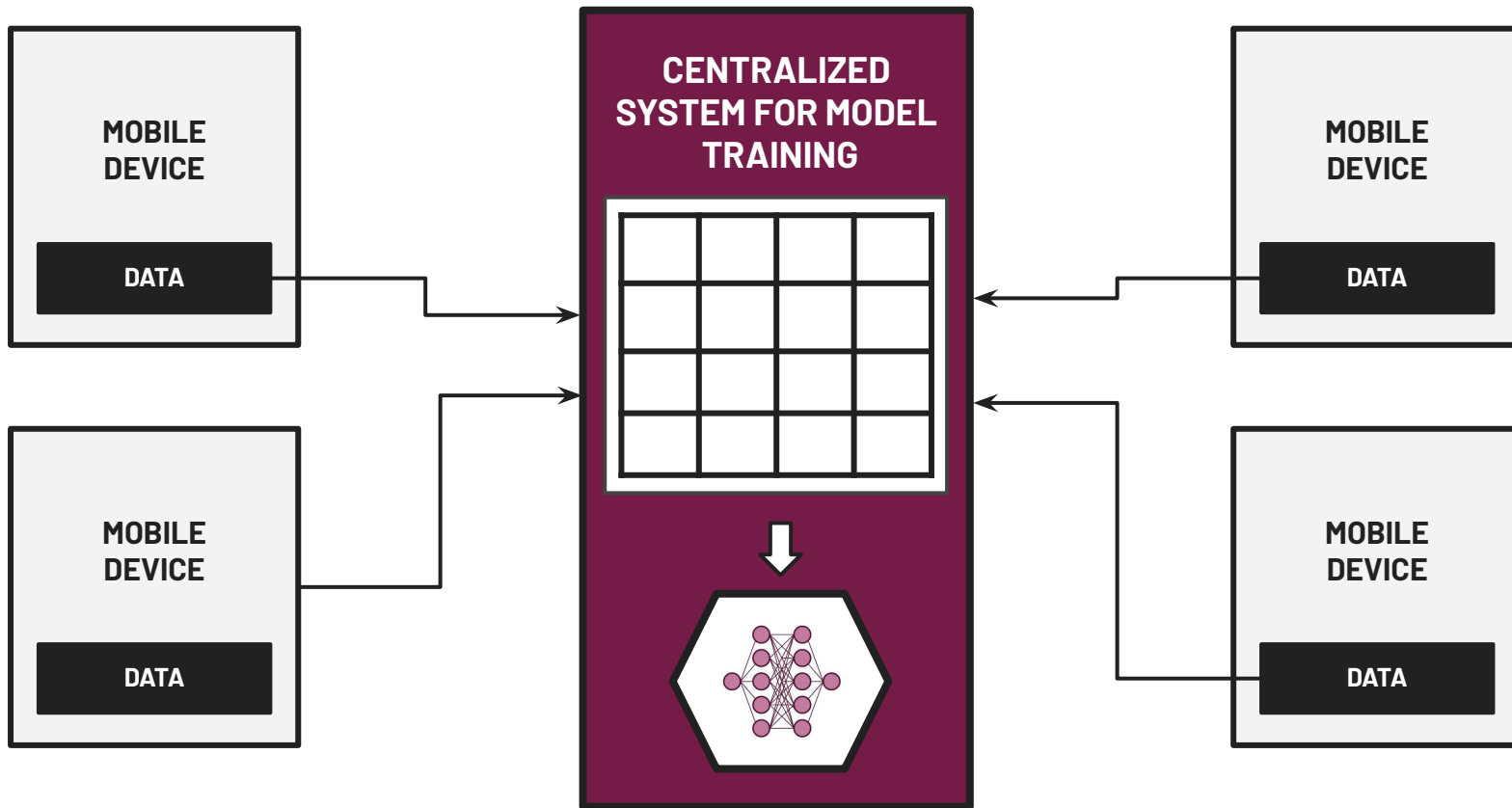


JOSHUA ARVIN LAT
CTO @ NUWORKS INTERACTIVE LABS

Pragmatic State Management in React, Angular, and Vue.js Applications



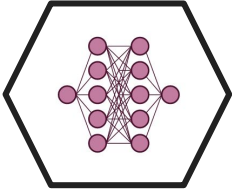
MACHINE LEARNING IN MOBILE APPS USING JAVASCRIPT



MOBILE APP

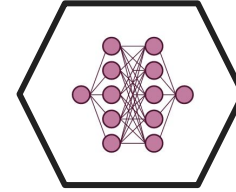


SERVER



SERVER-SIDE INFERENCE

MOBILE APP



ON-DEVICE MACHINE LEARNING



HELPS WITH
DATA PRIVACY

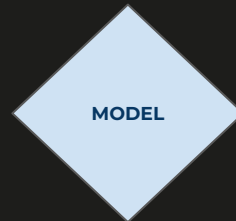
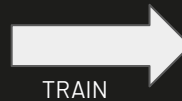
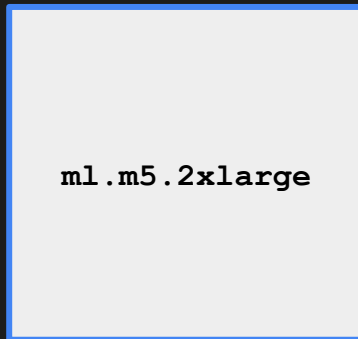
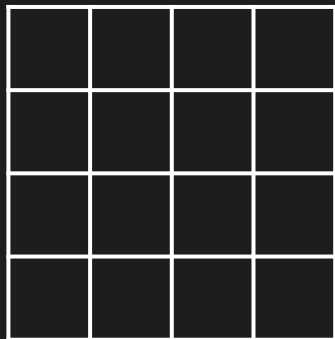
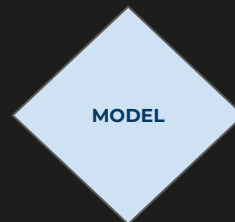
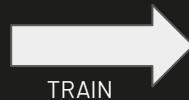
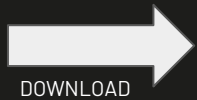
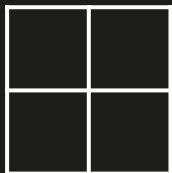
WORKS
OFFLINE

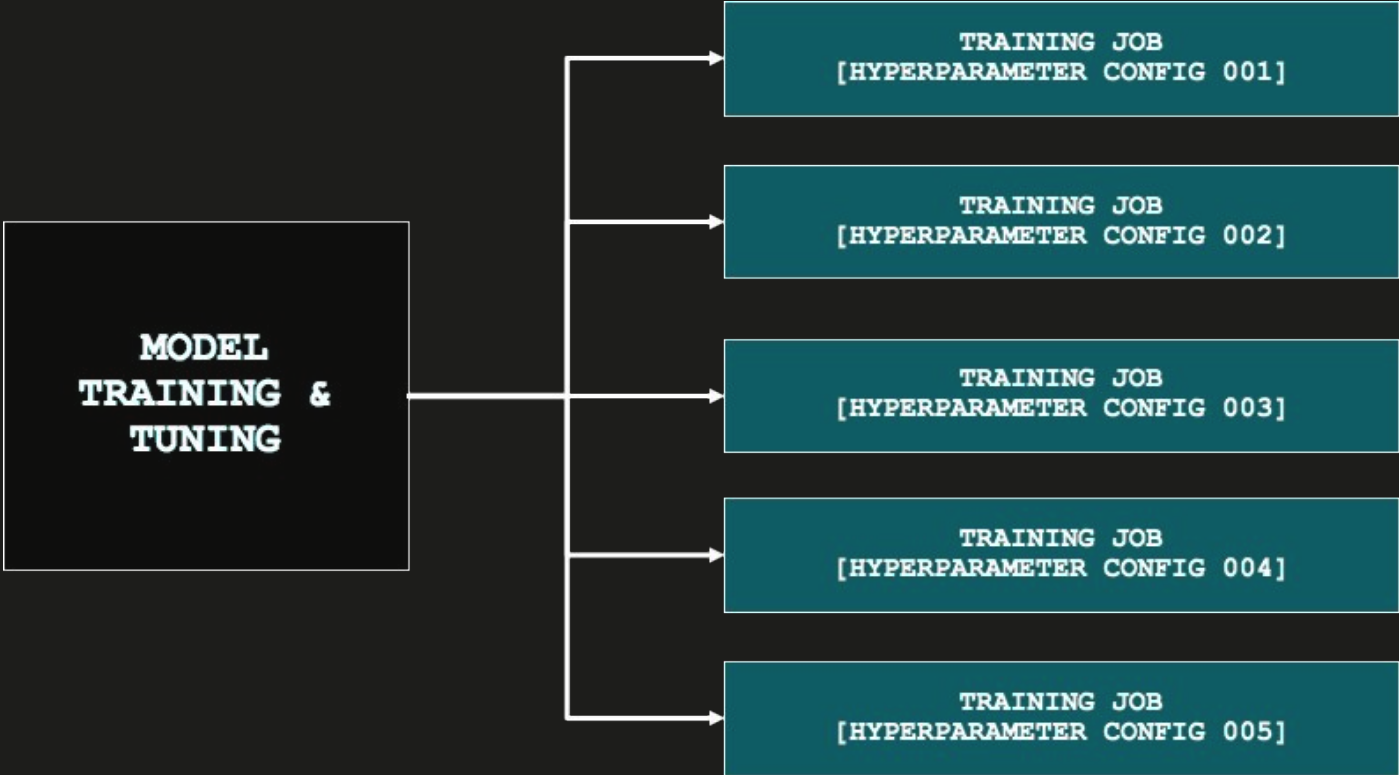
NO SERVERS
NEEDED

BETTER
LATENCY



MACHINE LEARNING IN THE CLOUD USING JAVASCRIPT





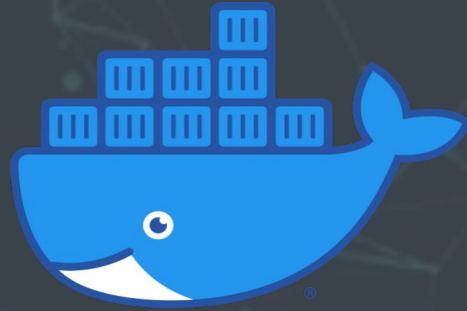


**REAL-TIME
ENDPOINT**

**ASYNCHRONOUS
ENDPOINT**

**SERVERLESS
ENDPOINT**

**BATCH
TRANSFORM**



CONTAINER IMAGE SUPPORT

The background is a solid dark red color with several overlapping, semi-transparent, lighter red geometric shapes, primarily triangles and quadrilaterals, creating a layered, abstract effect.

USING THE RIGHT TOOLS FOR THE JOB

**BUSINESS
REQUIREMENTS**

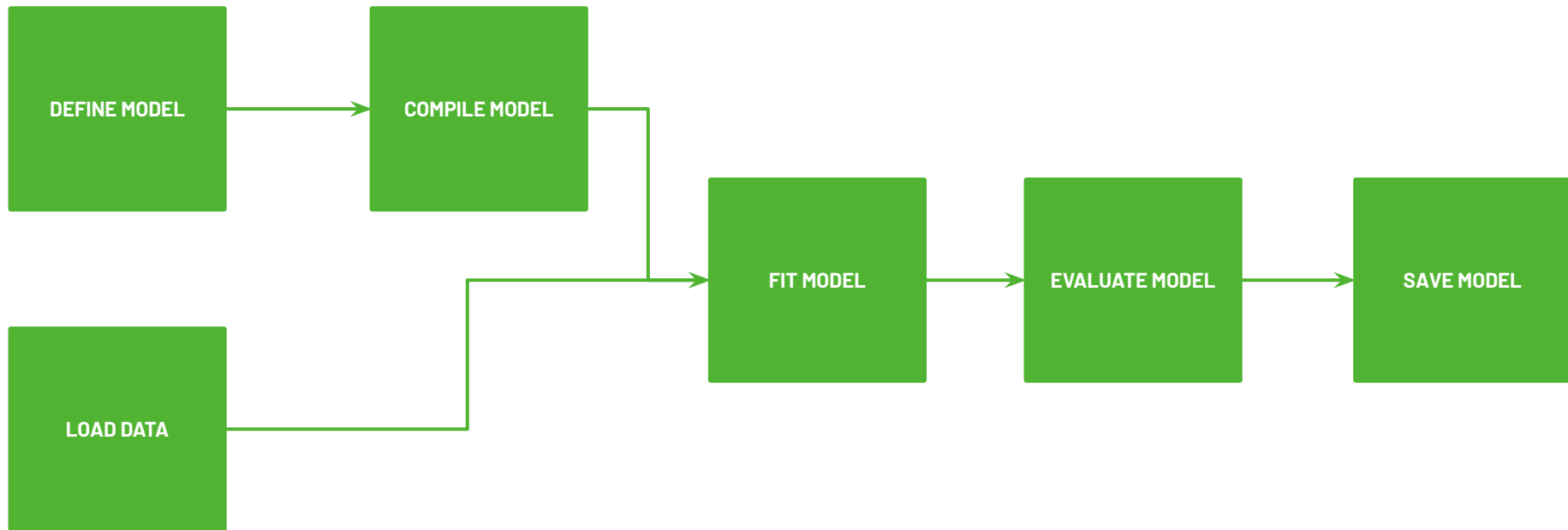


**TECHNICAL
SOLUTION**



BUILDING BLOCKS





TRAIN IN SERVER

+

DEPLOY IN SERVER

TRAIN IN SERVER

INFERENCE IN THE BROWSER

TRAIN IN SERVER

ON-DEVICE INFERENCE
(MOBILE)





**BUILDING MACHINE LEARNING-POWERED
APPLICATIONS WITH JAVASCRIPT**