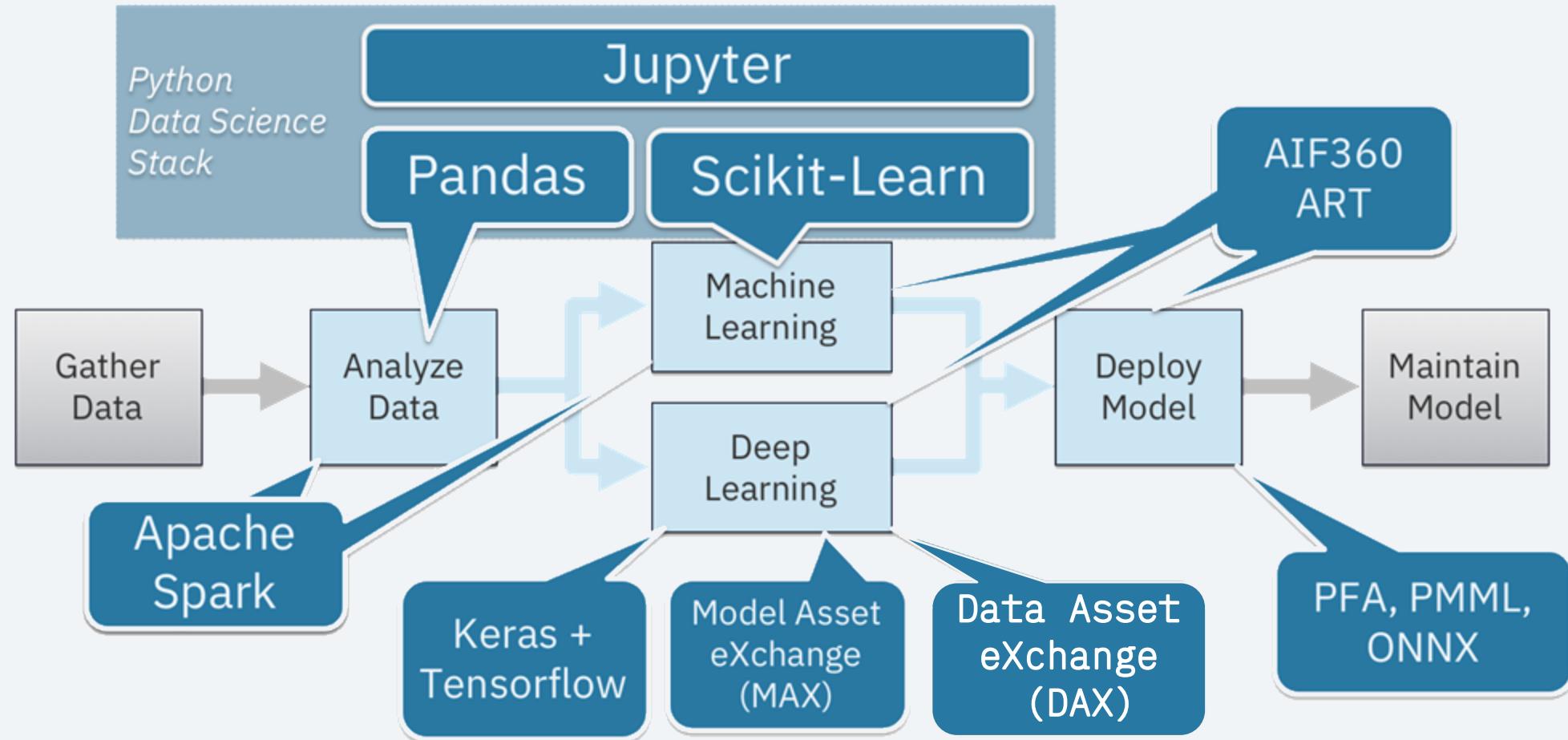


# An introduction to open source deep learning models for application developers

Patrick Titzler  
Va Barbosa  
Jeremy Nilmeier

Lab material: <http://ibm.biz/max-at-oscon>

# CODAIT: Improving Enterprise AI lifecycle in Open Source



<https://ibm.biz/codait-projects>

# Our goal: broader adoption of AI

Think about your daily life

- ... know how to use a mobile phone
- ... know how to drive a car (take ride-share, ...)

You can do many things with a “minimum” amount of knowledge

**Make AI accessible to every developer:**

- Reduce need for expert skills
- Improve “Time to Value”

# Programming vs learning (1)

Programming (Developer):

- Implement *source code that produces desired outcome*
- Examples: web application, microservice
- Not well suited to solve certain kinds of problems

Is there an orange in the image?



Photo by Tim Mossholder on Unsplash

# Programming vs learning (2)

Machine/deep learning (Data scientist, ML engineer):

- Build model [code]
- Train model using lots of *prepared* data: produces weights



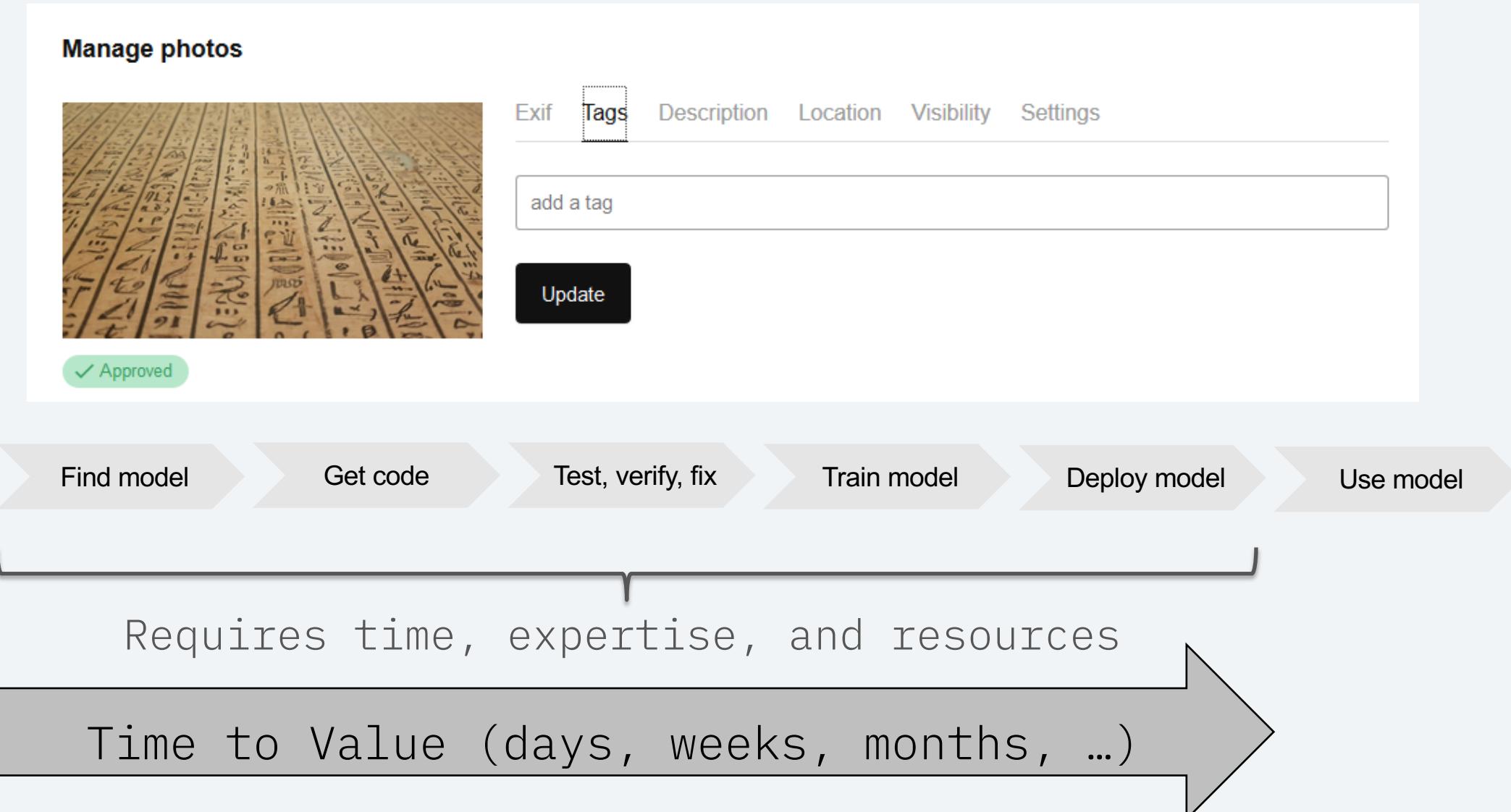
- *Model code + weights yield (hopefully) desired outcome*



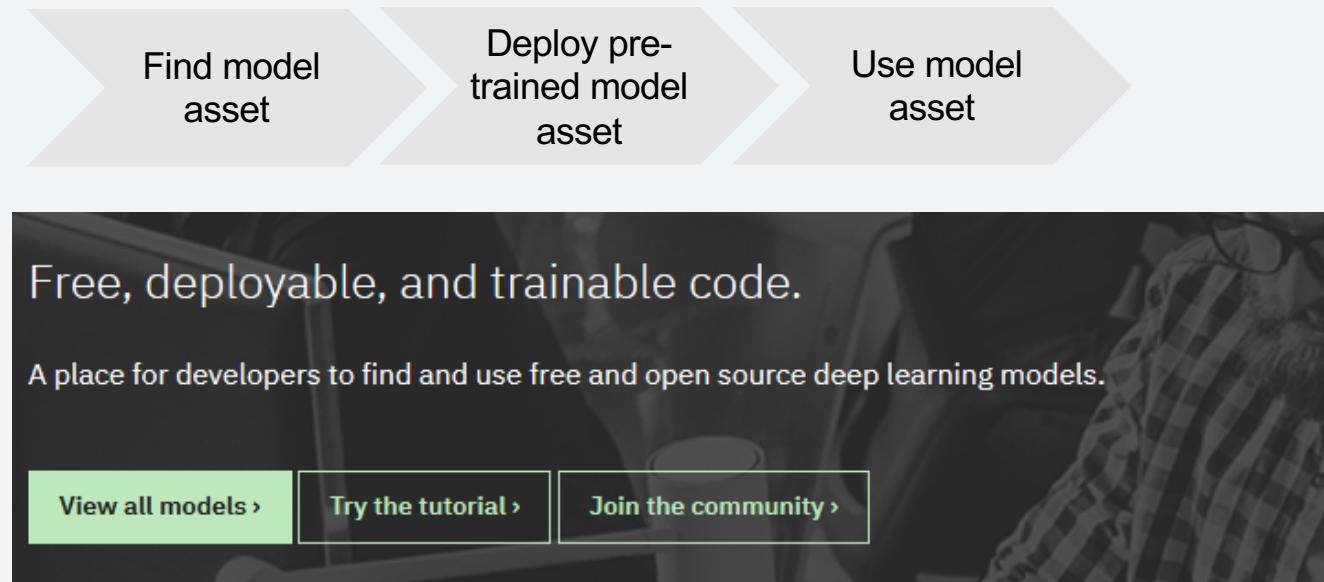
Trained model

- Model training and execution requires framework (TensorFlow,...)
- Examples: audio classification, object detection in images

# Example: suggest image tags



# MAX: Reduces “Time to Value”



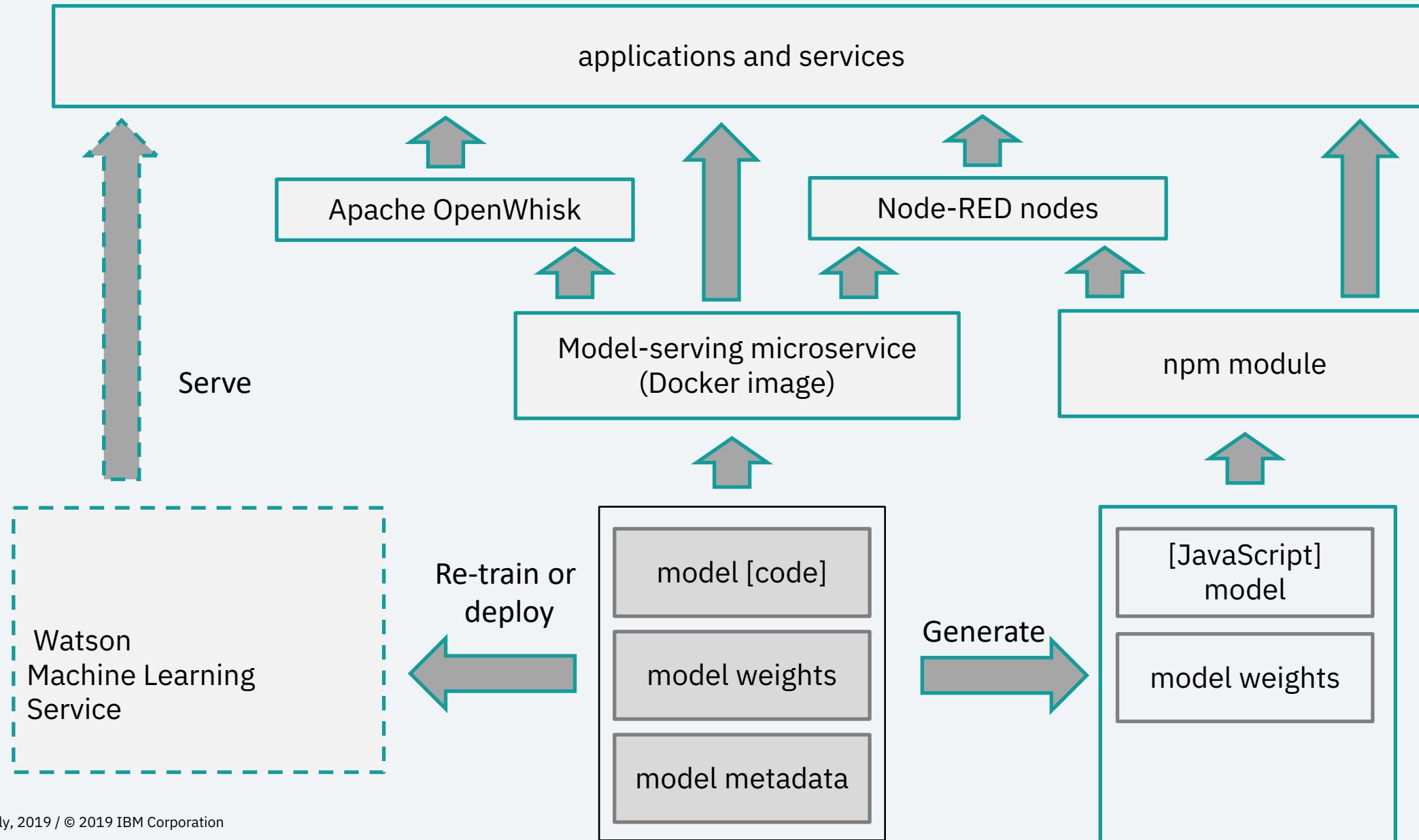
- Audio classification
- Image classification
- Text classification
- Object detection
- Facial recognition
- Image-to-image translation
- Image-to-text translation
- Named entity recognition
- Text feature extraction
- ...

The screenshot shows three model cards:

- Facial Emotion Classifier** (Deployable | Facial Recognition): Detect faces in an image and predict the emotional state of each person. Includes a "View model >" button and categories "Artificial intelligence" and "Deep learning".
- Image Segmente** (Deployable | Object Detection In Images): Identify objects in an image, additionally assigning each pixel of the image to a particular object. Includes a "View model >" button and categories "Artificial intelligence" and "Deep learning".
- Object Detector** (Deployable | Object Detection In Images): Localize and identify multiple objects in a single image. Includes a "View model >" button and categories "Artificial intelligence" and "Deep learning".

At the bottom of the page is the URL [ibm.biz/model-exchange](http://ibm.biz/model-exchange).

# What are MAX model assets?



# Hands-on lab: Explore/Use model assets

Deployable | Object Detection In Images

## Object Detector

Localize and identify multiple objects in a single image.

Get this model

Try the API

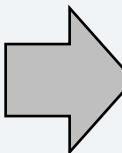
Try the web app

Try in a Node-RED flow

Use model in  
IOT flows



Try the  
model-serving  
microservice



Try model in  
an example web app

Use model in web  
browser or Node.js  
(not shown)

# Workshop modules

Instructions: <http://ibm.biz/max-at-oscon>

- Module 1: Deep Learning microservices
- Module 2: Web application development
- Module 3: Internet of Things

# Module 1: Deep learning microservices

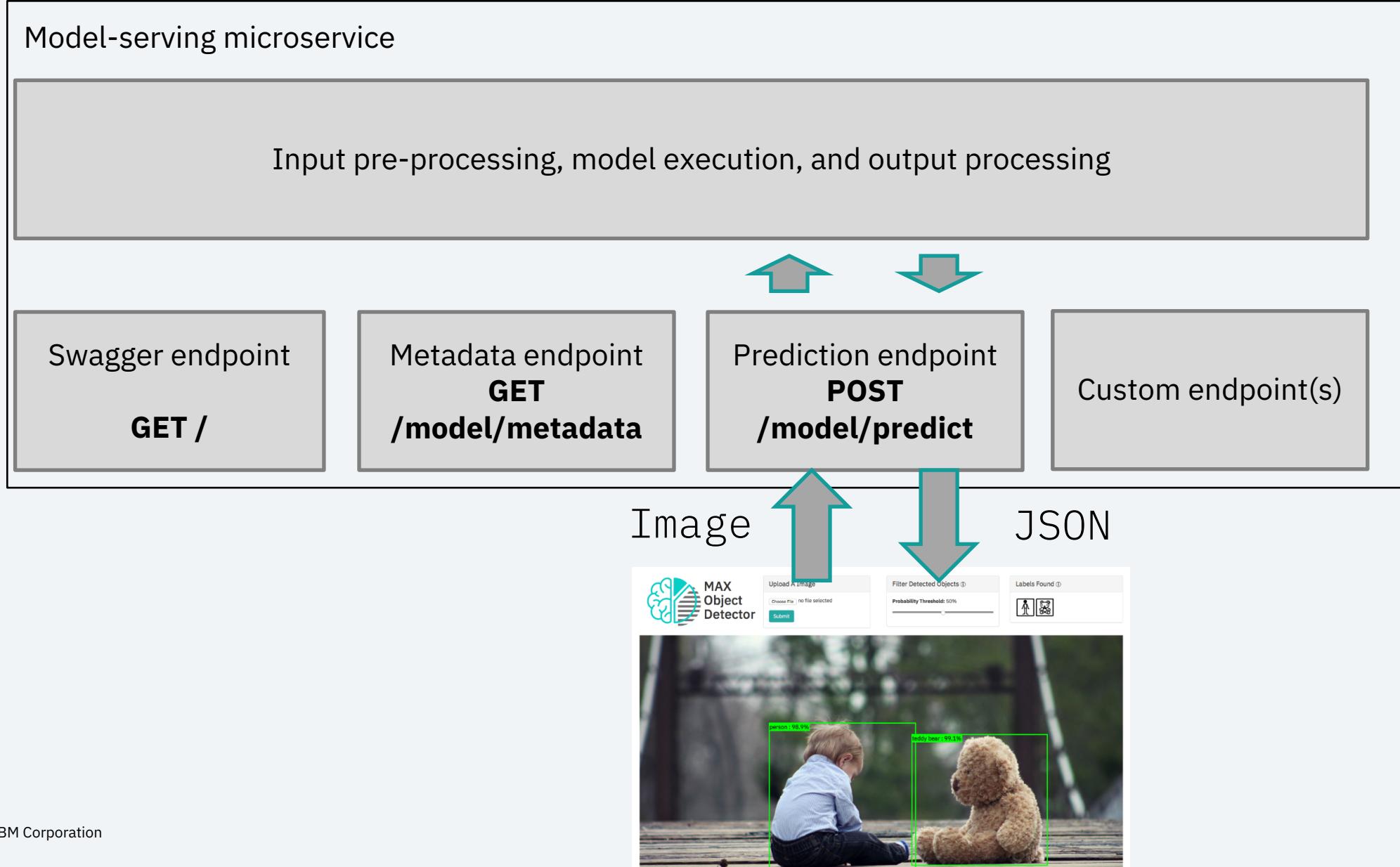
Tasks:

- Deploy a model-serving microservice using Docker
- Explore microservice endpoints

Time: 20 Minutes

Instructions: <http://ibm.biz/max-at-oscon>

# Module 1 - Deep learning microservices



# Module 2 - Web app development

Tasks:

- Complete a simple JavaScript/Python web app that uses a deep learning microservice

Time: 20 Minutes

Instructions: <http://ibm.biz/max-at-oscon>

# Module 3 - Internet of Things

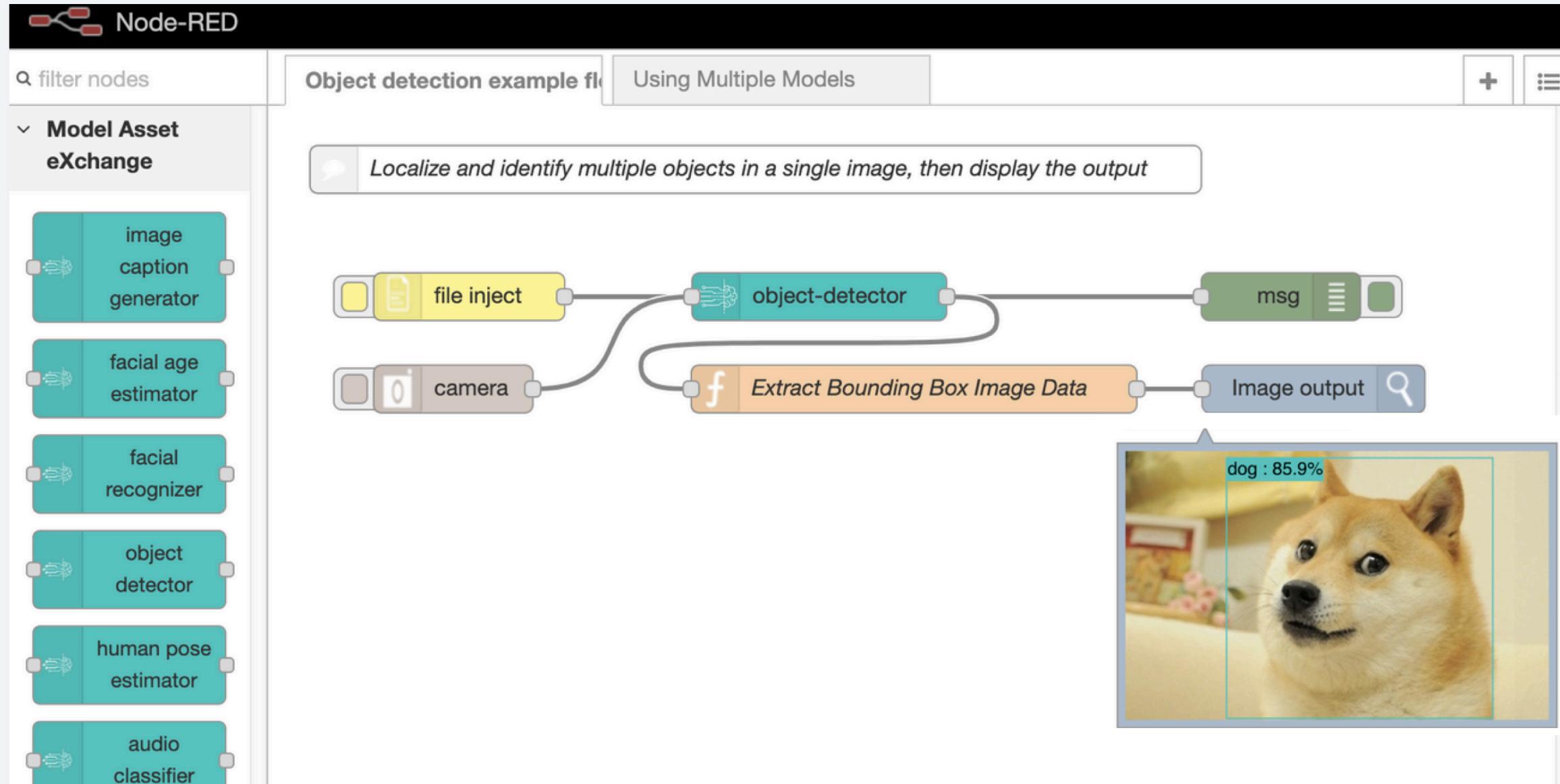
Tasks:

- Create a Node-RED flow that generates captions for captured images

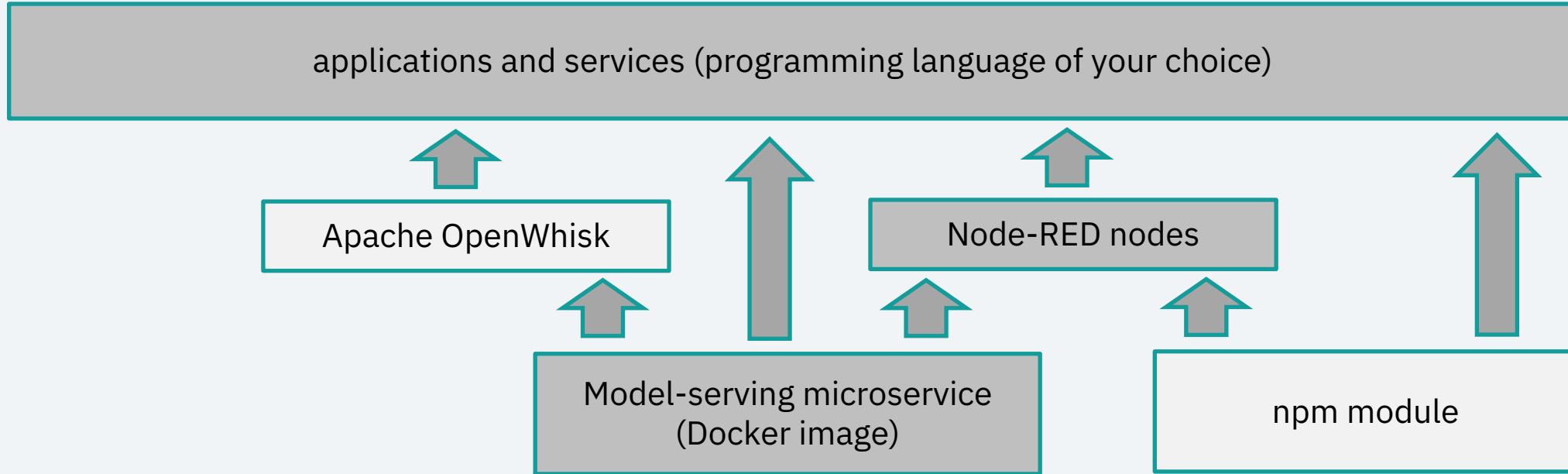
Time: 20 Minutes

Instructions: <http://ibm.biz/max-at-oscon>

# Module 3: Wire things together



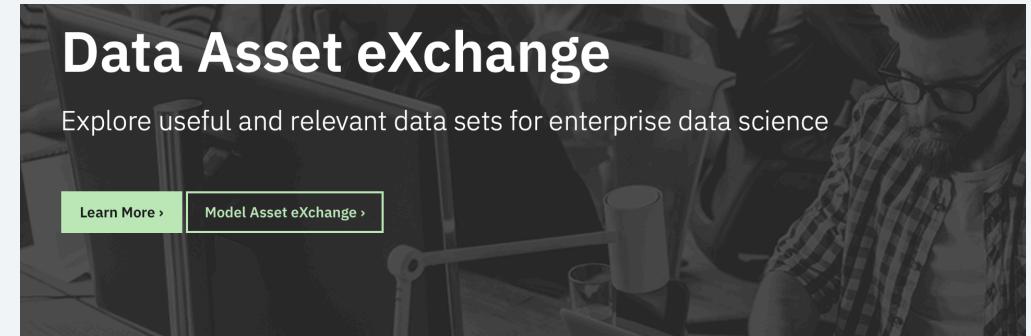
# Workshop summary



- Little/no AI expertise required to get started

# Just announced: Data Asset Exchange

- Curated free and open datasets
- Open data licenses
- Standardized dataset formats  
and metadata



- <https://ibm.biz/data-asset-exchange>

# Resources

- MAX on IBM Developer: <https://ibm.biz/model-exchange>
- Public Slack: <https://ibm.biz/max-slack>
- Twitter: <https://twitter.com/ibmcodait> Medium: <https://medium.com/codait>

# Rate today's session

**Cyberconflict: A new era of war, sabotage, and fear**

[See passes & pricing](#)

David Sanger (The New York Times)  
9:55am-10:10am Wednesday, March 27, 2019  
Location: Ballroom  
Secondary topics: Security and Privacy

**Rate This Session**

We're living in a new era of constant sabotage, misinformation, and fear, in which everyone is a target, and you're often the collateral damage in a growing conflict among states. From crippling infrastructure to sowing discord and doubt, cyber is now the weapon of choice for democracies, dictators, and terrorists.

David Sanger explains how the rise of cyberweapons has transformed geopolitics like nothing since the invention of the atomic bomb. Moving from the White House Situation Room to the dens of Chinese, Russian, North Korean, and Iranian hackers to the boardrooms of Silicon Valley, David reveals a world coming face-to-face with the perils of technological revolution—a conflict that the United States helped start when it began using cyberweapons against Iranian nuclear plants and North Korean missile launches. But now we find ourselves in a conflict we're uncertain how to control, as our adversaries exploit vulnerabilities in our hyperconnected nation and we struggle to figure out how to deter these complex, short-of-war attacks.

**David Sanger**  
The New York Times

David E. Sanger is the national security correspondent for the *New York Times* as well as a national security and political contributor for CNN and a frequent guest on *CBS This Morning*, *Face the Nation*, and many PBS shows.



Session page on conference website

**✓ Attending** Notes Remove

**Cyberconflict: A new era of war, sabotage, and fear**

🕒 9:55 AM - 10:10 AM, Wed, Mar 27, 2019

**Speakers**

 David Sanger  
National Security Correspondent  
The New York Times

📍 Ballroom

*Keynotes*

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**SESSION EVALUATION**

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