November 19, 2021, 9 AM - 5 PM EST - ONLINE

Azure Community BOOTCAMP

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Where Tech Meets.

Azure Community BOOTCAMP

Room 1 - Pennsylvania

Friday, November 19, 2021

Ben Steinhauser
Cloud Solution Architect
Azure Static Web Apps: I am a Believer!

Alpa Buddhabhatti
Cluster reply , London , UK
Azure Logic Apps for everyone

Maxim Salnikov
Developer Engagement Lead at Microsoft, Tech Communities Lead, Keynote Speaker
Azure cloud for the web frontend developers

Rajaniesh Kaushikk
Enterprise Cloud Solution Architect
Deploying SQL server Always on Availability Group on Azure Kubernetes Services (AKS).

Thomas Hafermalz
Azure Solution Architect@Trivadis AG
Introduction to Azure Kubernetes Service (AKS)

Sergey Chubarov
Ethical Hacker
Offensive Azure Security

Taiob Ali
Microsoft MVP -Data Platform
Options and considerations for migrating SQL Server databases to Azure

Sam Cogan
Solutions Architect & Azure MVP
Regain Control with Azure Governance

Marco Obinu
Azure MVP, Advisory Engineer @ Softjam S.p.A, Geek to the bone
Train your Bicep to improve your ARM's strength!

Azure Community BOOTCAMP

Room 2 – New York

Friday, November 19, 2021

Deepthi Goguri
SQL Database Administrator
Azure Fundamentals 101

Ron Dagdag
Lead Software Engineer at Spacee and Microsoft MVP
AI to the edge with Azure Percept

Eric Cheng
Digital Solutions Architect - Komatsu Australia
Monitoring your Canvas Power Apps with Azure Application Insights

asif waquar
Cloud Solution Architect at ABN AMRO Bank / Microsoft Azure MVP
Automate app deployment with Terraform & Azure DevOps

Roy Kim
Azure Cloud Engineer
Performance Testing and Monitoring your Azure Kubernetes Service

Abhijeet Jadhav
Microsoft MVP - Office 365 Development
Azure Communication Services - What, Where and How to use

Debasis Saha
Microsoft Certified Trainer, C# Corner MVP
Azure Functions - Zero to Hero

Shruti Kuber
Developer Advocate
Cellular Network Diagnostics with Azure IoT

Shweta Lodha
C# Corner MVP, Speaker, Blogger, Data Analyst and Developer
Finding Abnormalities in Data using Azure Cognitive Services

AI to the Edge with Azure Percept

RON DAGDAG

See no evil
Hear no evil
Speak no evil

Tōshō-gū **temple in Nikko, Japan**

Agenda

- What is AI enabled IOT?
- What is Azure Percept?
- Capabilities of Azure Percept
- Demo

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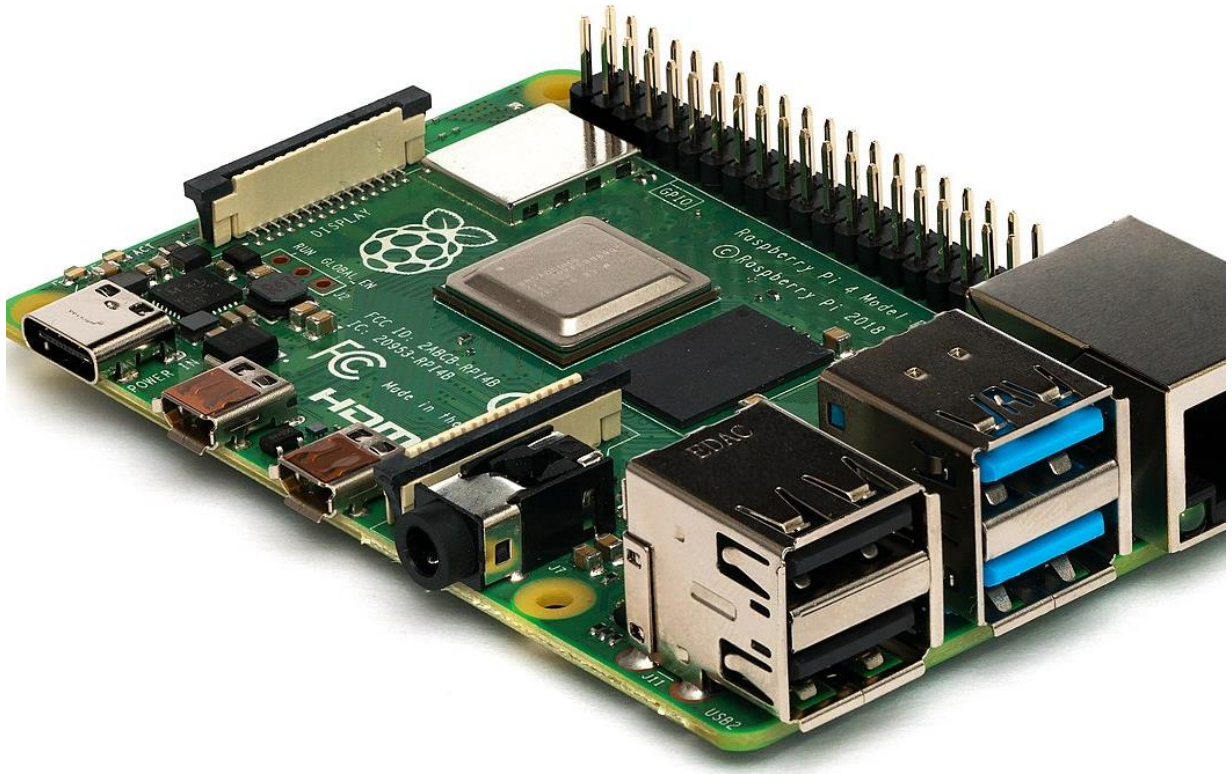
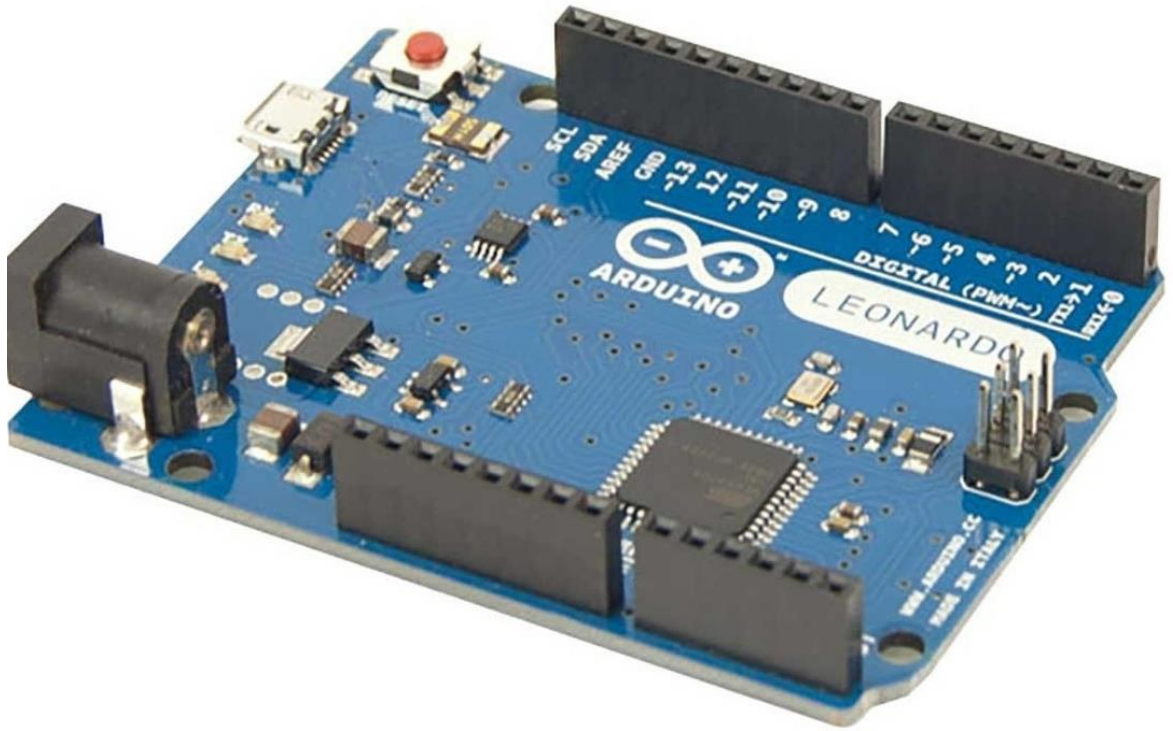
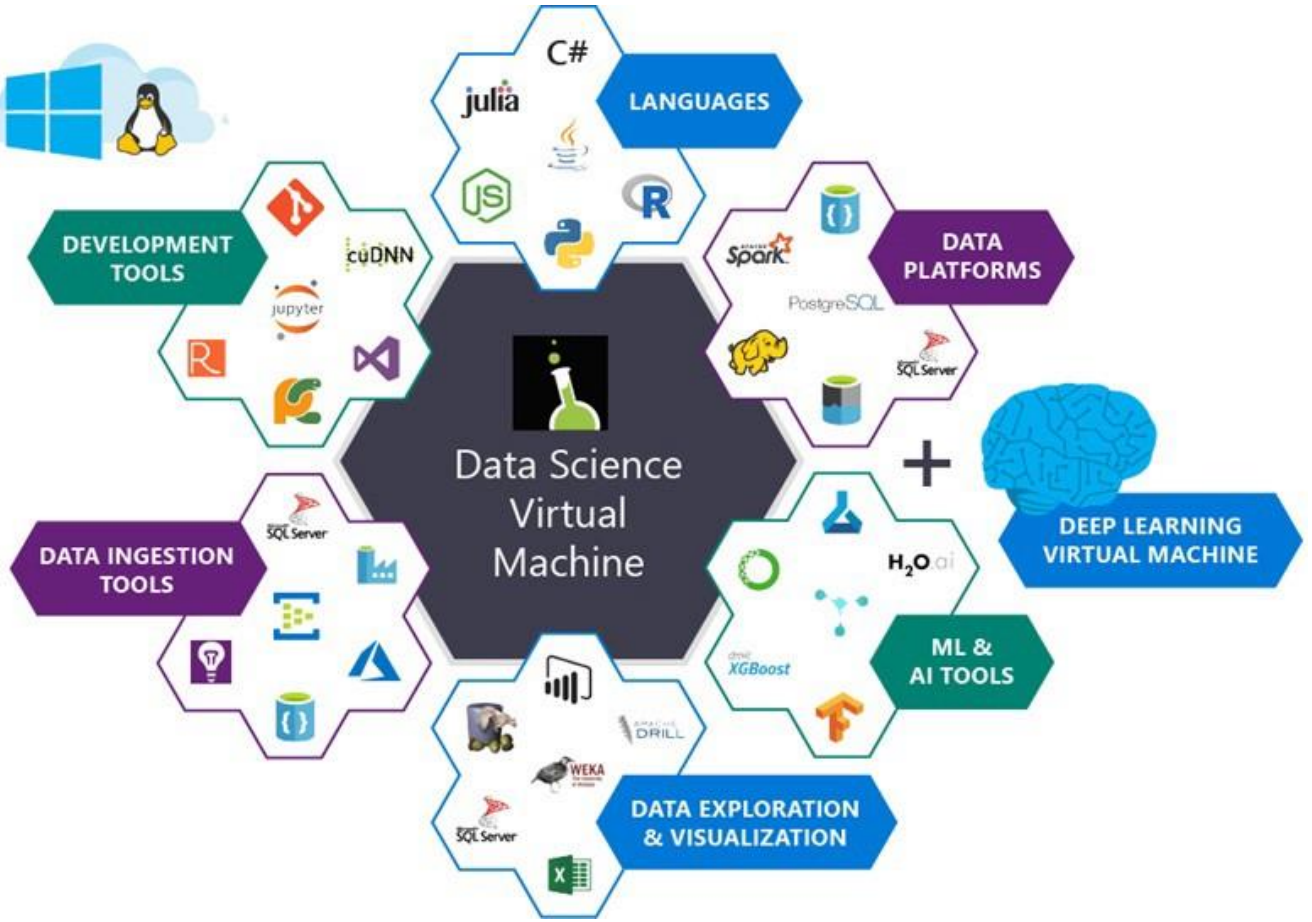
Internet Of Things





Computer Vision and Machine Learning



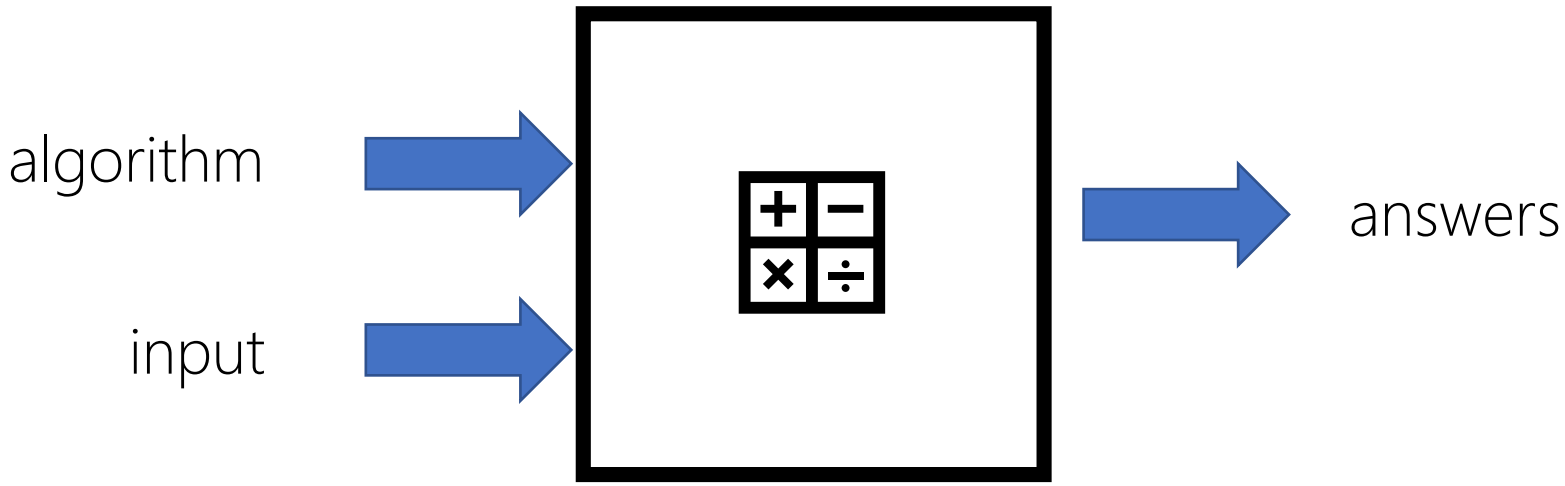
OpenCV

OpenVINO

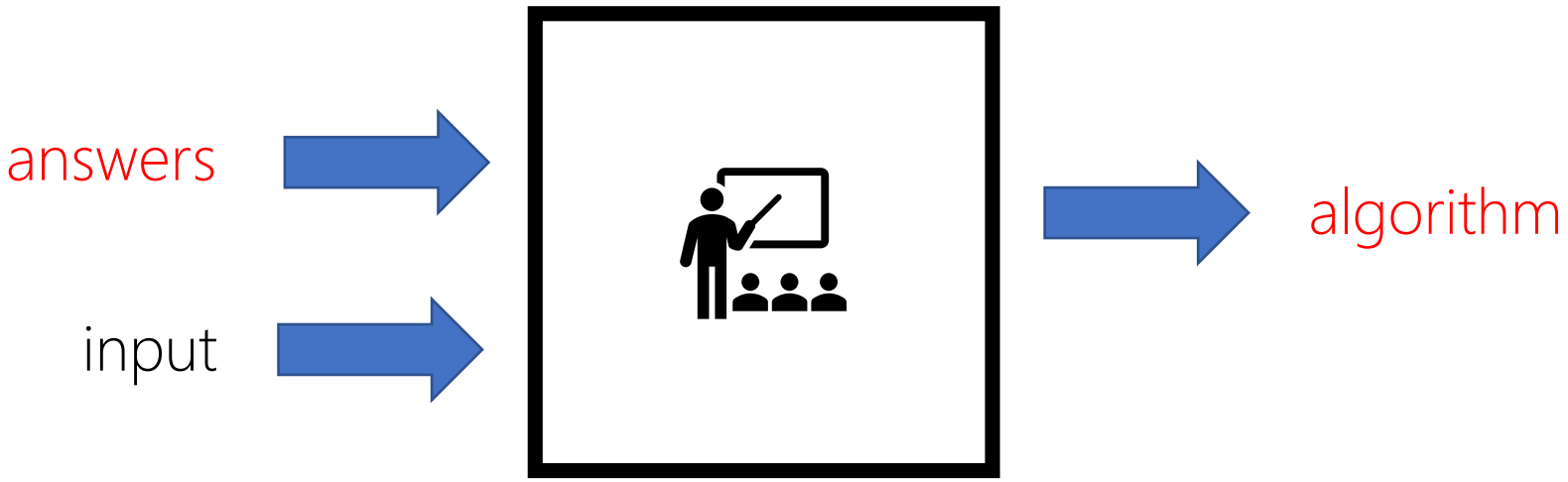
What is IOT?
Internet of Things

- connecting the Internet to the physical world via sensors
- Kevin Ashton in 1999
- any device that interacts with the physical world around it

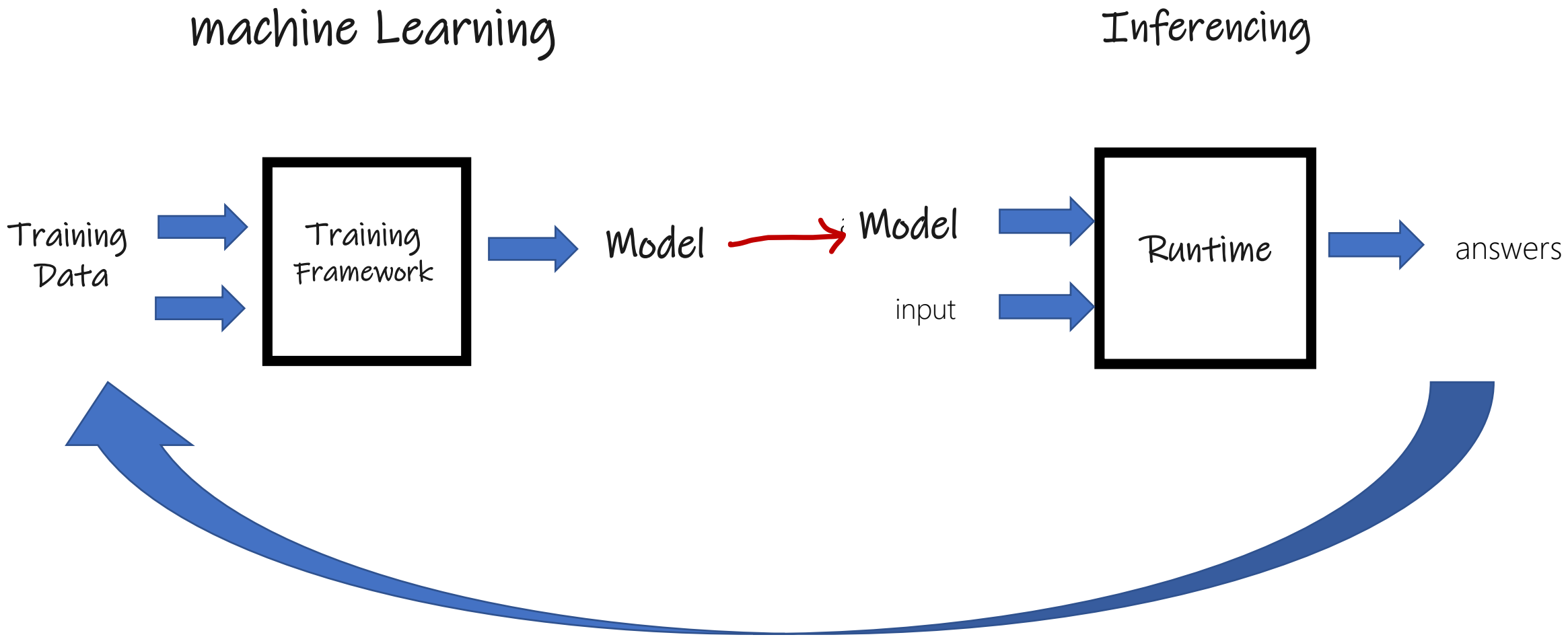
programming

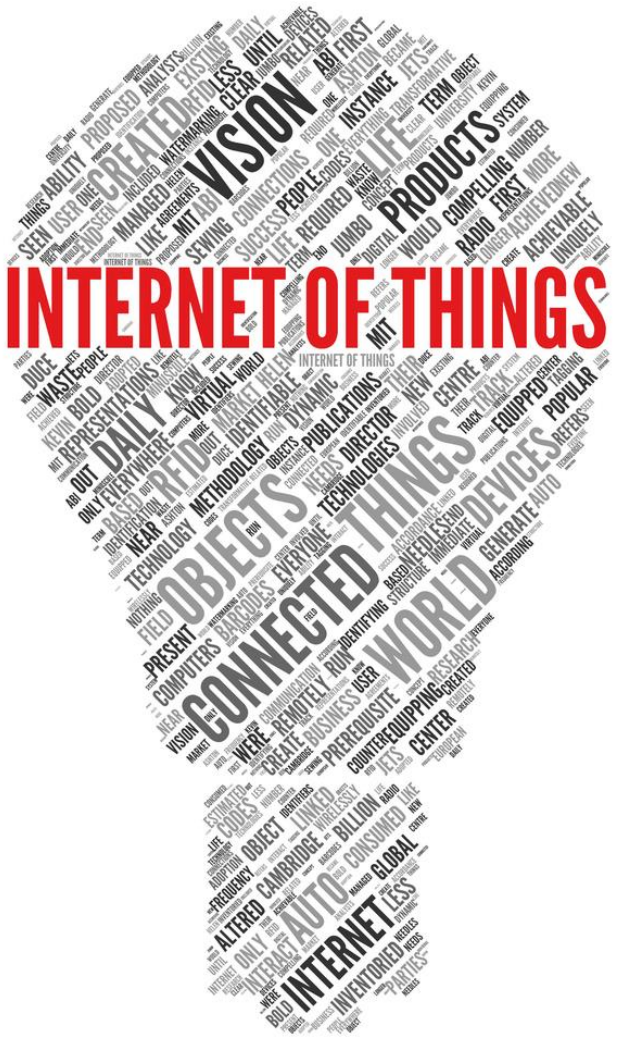


machine learning



ML Primer


machine Learning
Inferencing
Training Data
Training Framework
Model
Model
input
Runtime
answers



Remotely Monitor

- Gather Data
- Edge Processing
- Device Status

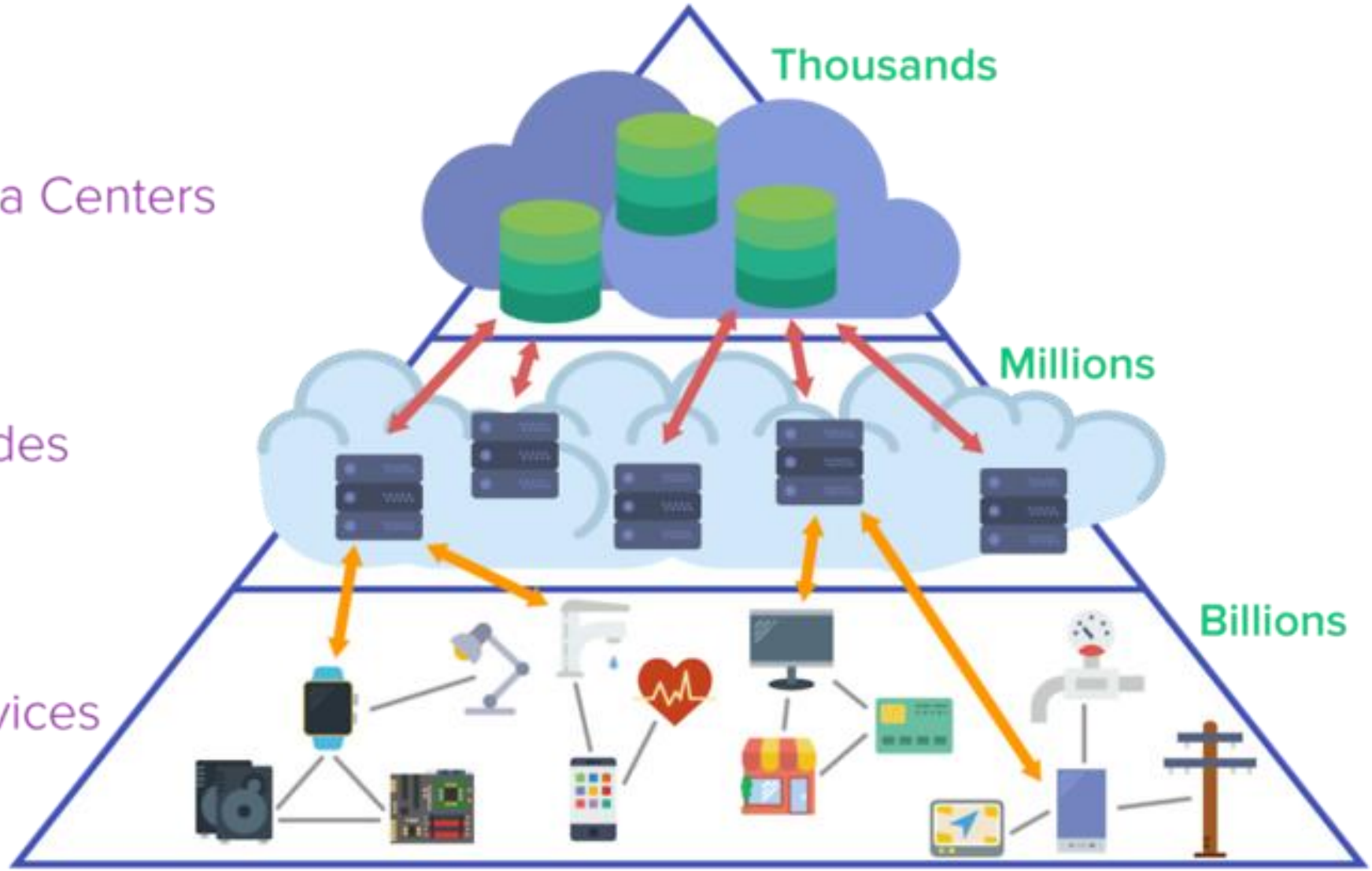
Control Device

- Send Commands
- Set Device Properties

CLOUD | Data Centers

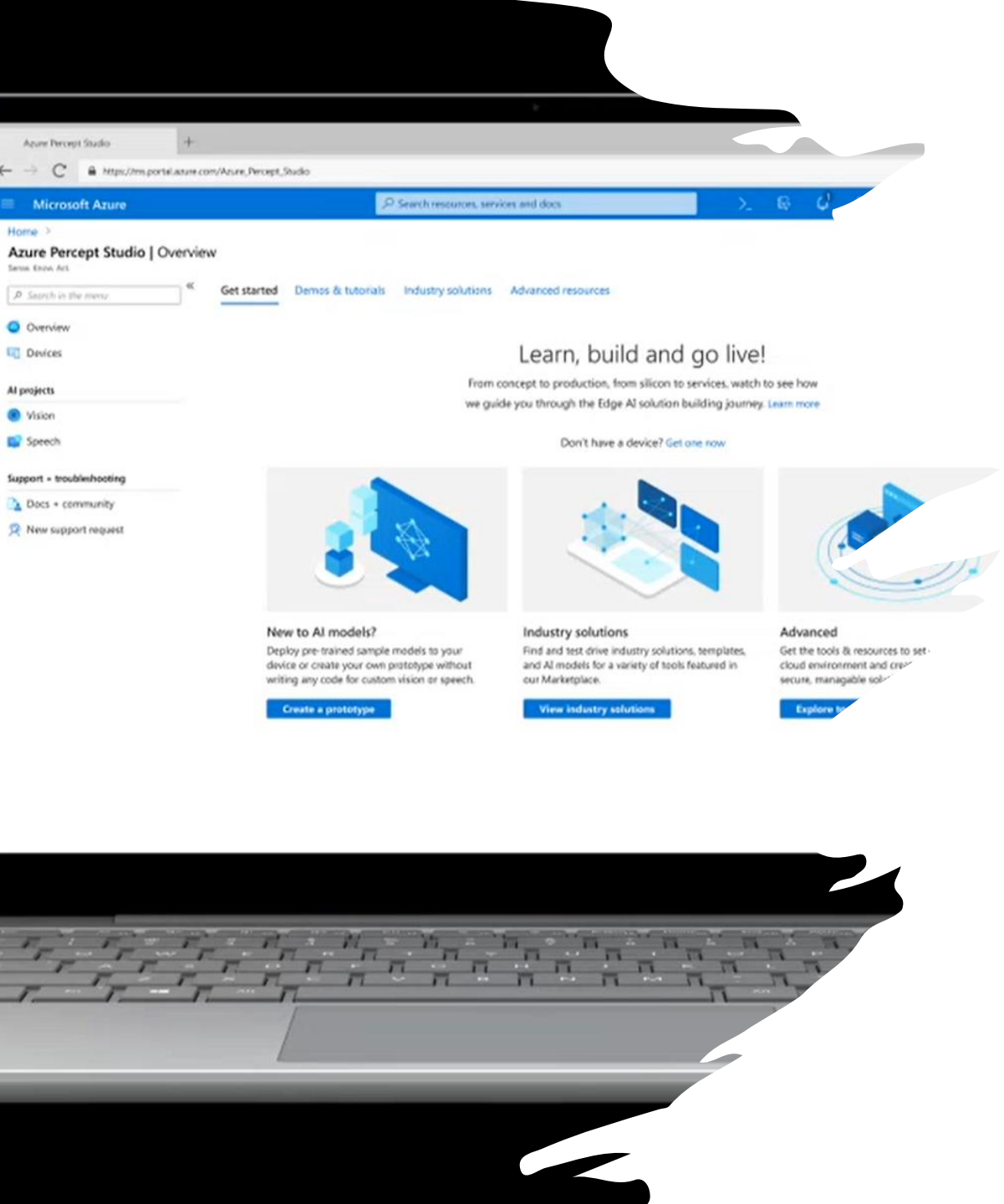
FOG | Nodes

EDGE | Devices



Azure Percept Dev Kit

Azure Percept Dev Kit, Vision and Audio



Azure Percept Studio

- Delightful onboarding
- Integrated experiences
- No code flow
- Advanced flow
- Prototype and deploy

Always Watching

Always Recording

Process
Video Locally

Limited
Recording

Intelligent
Video Analytics

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Azure Percept Vision

- Out-of-the-box AI recognition of common objects. No code required
- AI Acceleration
  - Intel Movidius Myriad X (MA2085) Vision Processing Unit (VPU) with Intel Camera ISP integrated, 0.7 TOPS
- Sensors and Visual Indicators
  - Sony IMX219 Camera sensor with 6P Lens
  - Resolution: 8MP at 30FPS, Distance: 50 cm – infinity
  - FoV: 120-degrees diagonal, Color: Wide Dynamic Range, Fixed Focus Rolling Shutter
- RGB Camera Support

Always Listening

Always Recording

Sound Processing at the edge

Limited Listening

Context Aware

Smart Assistants

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Azure Percept Audio

- Performance
  - 180 Degrees Far-field at 4 m, 63 dB
- Sensors, Visual Indicators, and Components
  - 4x MEM Sensing Microsystems Microphones
  - 2x Buttons, USB Hub, DAC
  - 3x LEDs, LED Driver
- Ports
  - 1x USB 2.0 Type Micro B
  - 3.5 mm Audio Out

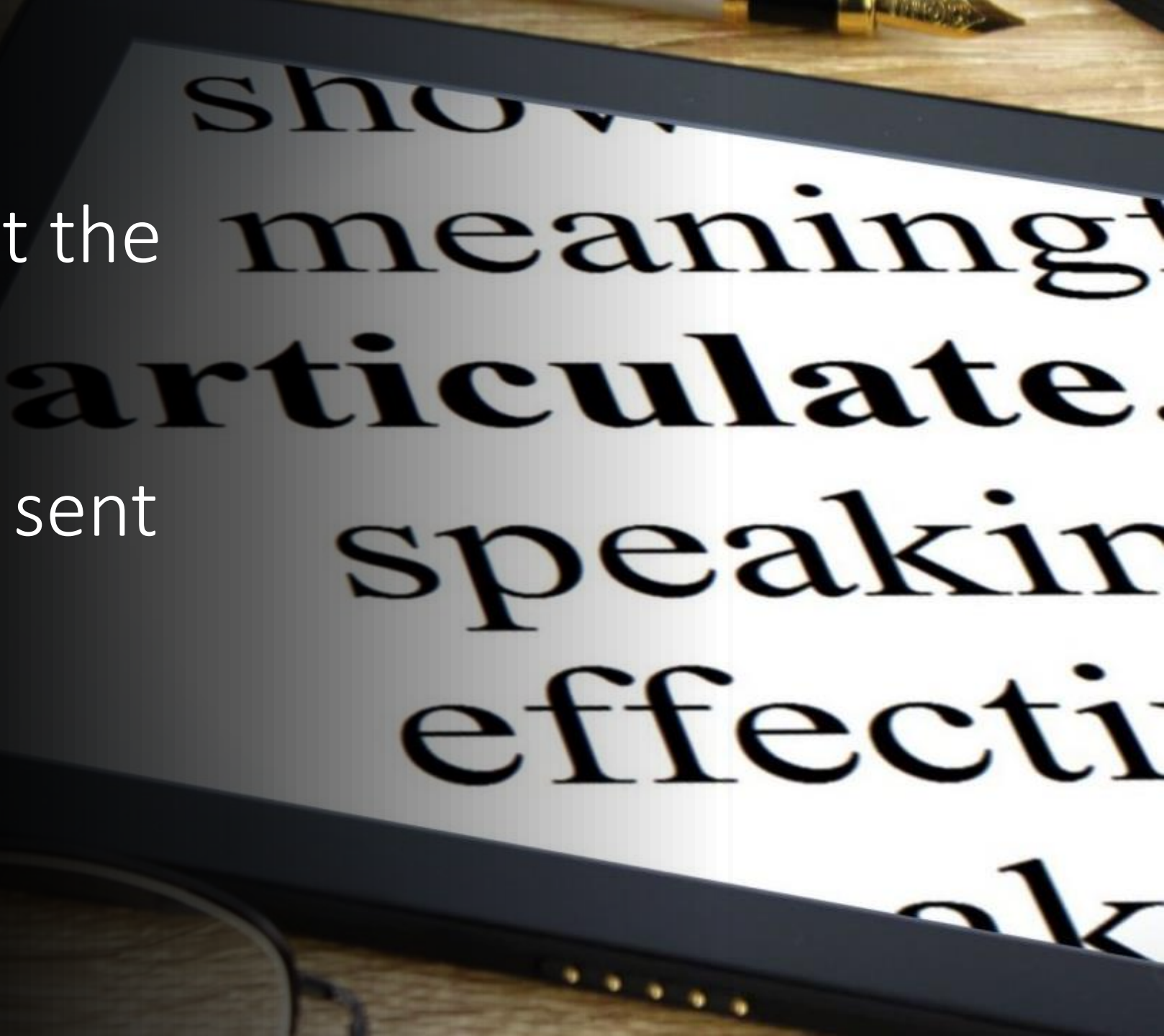
Always Broadcasting

Always Tracking

Data Processing at the Edge

Limit information sent to the Cloud

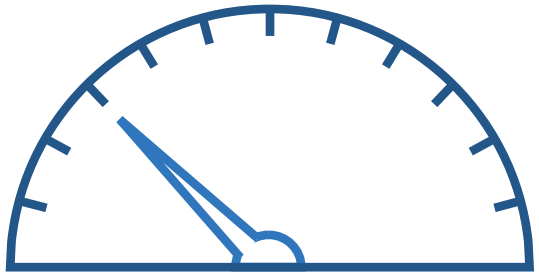
Intelligent Edge



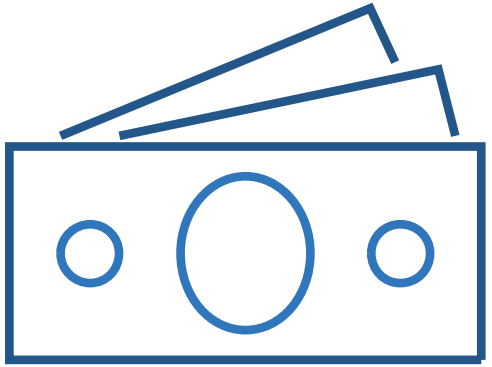
Azure Percept DK

- Processor
  - NXP iMX8m
- Security
  - TPM 2.0 Nuvoton NCPT750
- Connectivity
  - Wi-Fi and Bluetooth via Realtek RTL882CE
- Ports
  - 1x Ethernet
    2x USB-A 3.0
    1x USB-C

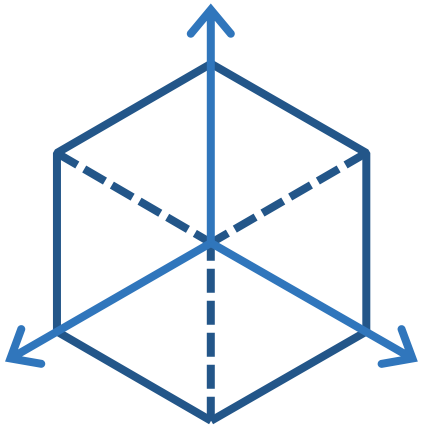
AI on the edge



Low latency

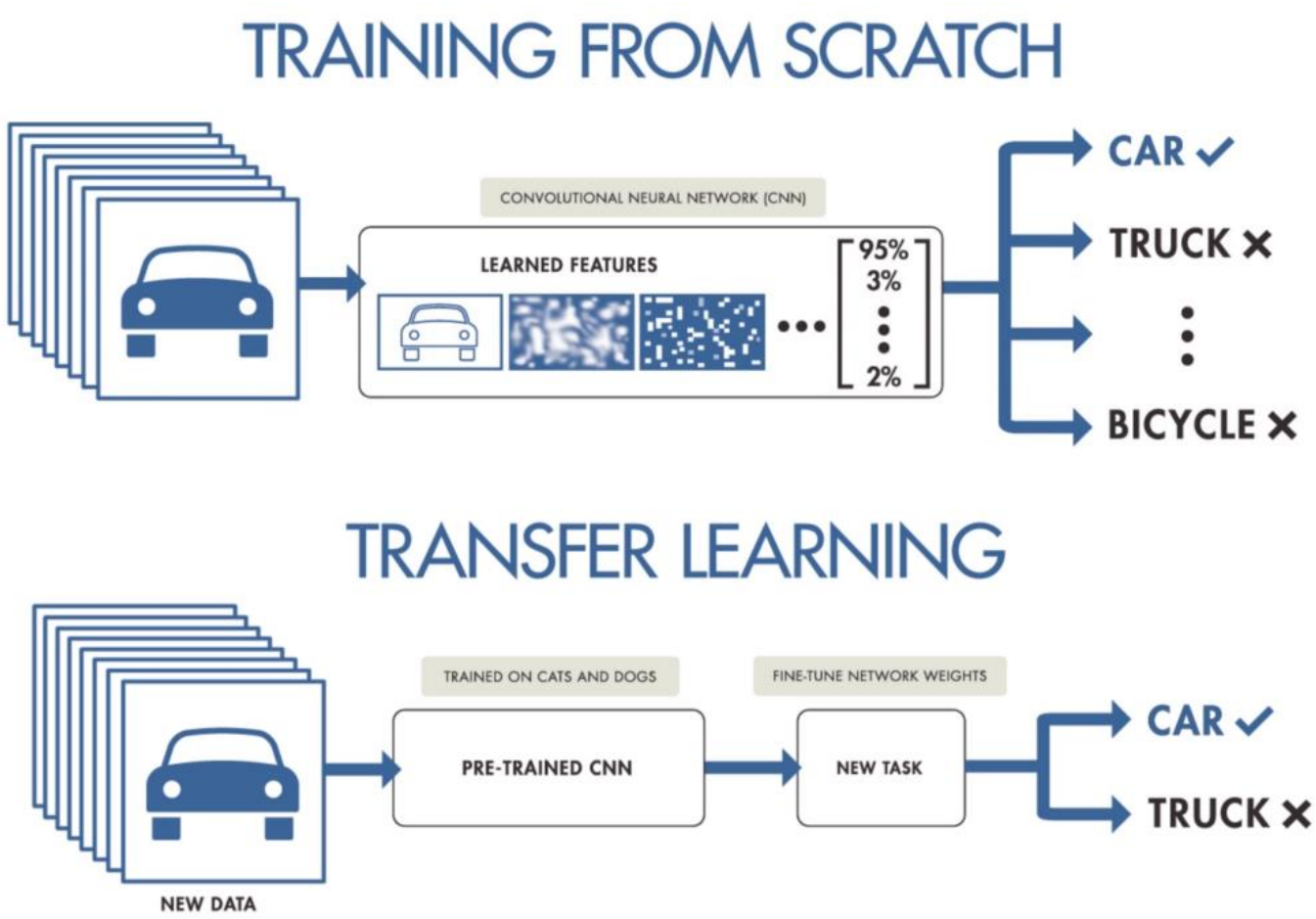


Scalability



Flexibility

What is Transfer Learning?

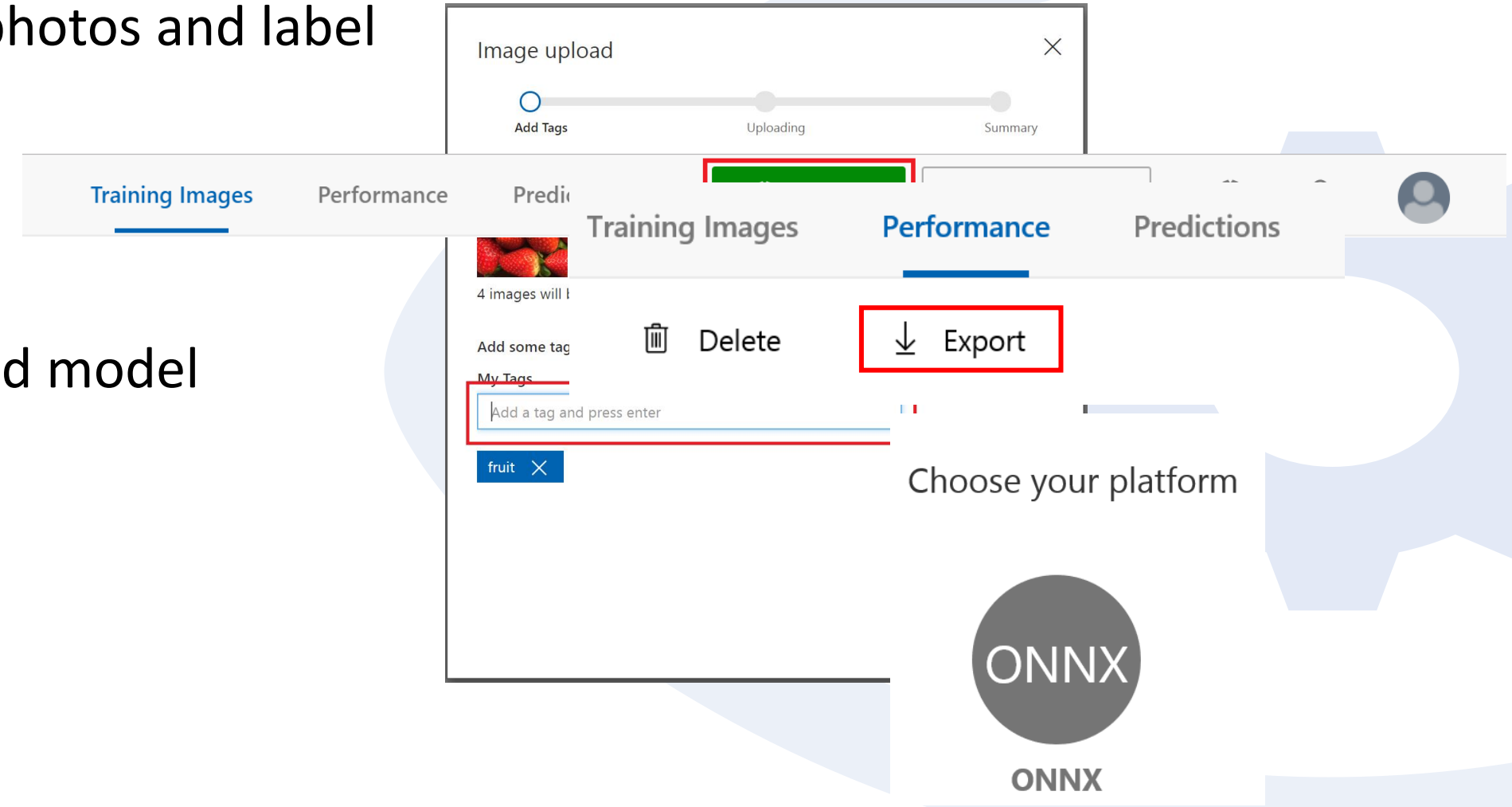


Custom Vision Service: customvision.ai

1. Upload photos and label

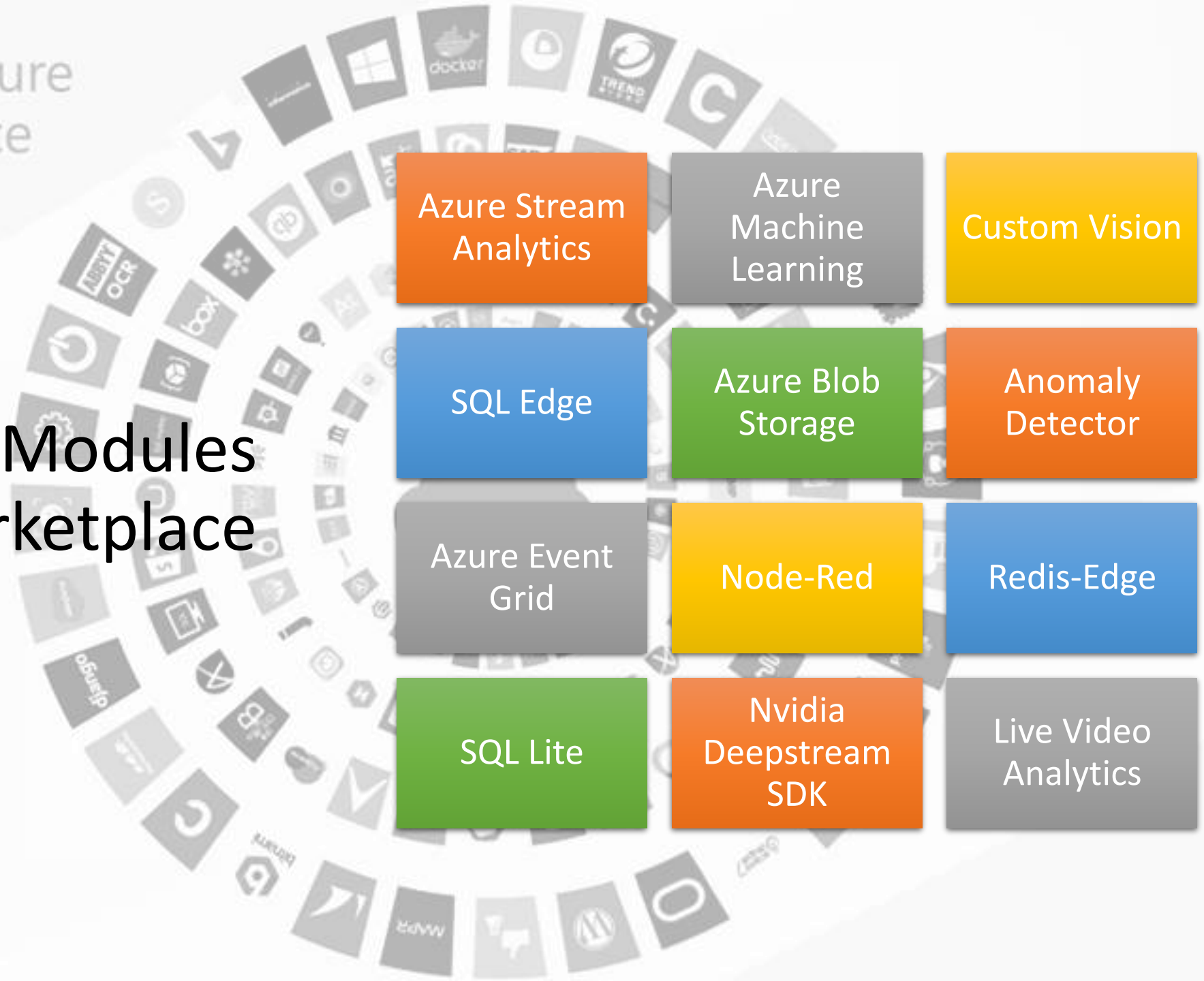
2. Train

3. Download model



Microsoft Azure Marketplace

IoT Edge Modules Azure Marketplace



Demo

- Azure Percept Studio
- Azure Percept DK
- Azure IoT Hub
- Azure Custom Vision
- ONNX Runtime
- OpenVINO
- Azure Percept Eye Module

Recap

✓What is AI enabled IOT?

AI – Learn from data

IOT - Monitor and Control devices

Process AI workload at the Edge

✓What is Azure Percept?

Easy way to prototype and deploy AI on the Edge

✓Capabilities of Azure Percept

Vision, Audio, Trust Module

Ron Dagdag

Lead Software Engineer / AI Edge Specialist

5th year Microsoft MVP awardee

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Thanks for geeking out with me about Monkeys and Azure Percept

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