Serverless Deep Neural Network(DNN) with Azure Functions and ML.Net

Praveen Raghuvanshi
@praveenraghuvan

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Introduction

- Cloud Architect @ Harman, A Samsung Company
- Domain: Professional Audio, Video & Control
- Area of Expertise: Cloud, Distributed computing
- Area of Interest: AI/ML and IoT
- Location: Bangalore, India
- Member: .NET foundation

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Agenda

- Serverless
- Azure Functions
- Deep Neural Networks(DNN)
- Image Classification
- ML.Net
- Demo

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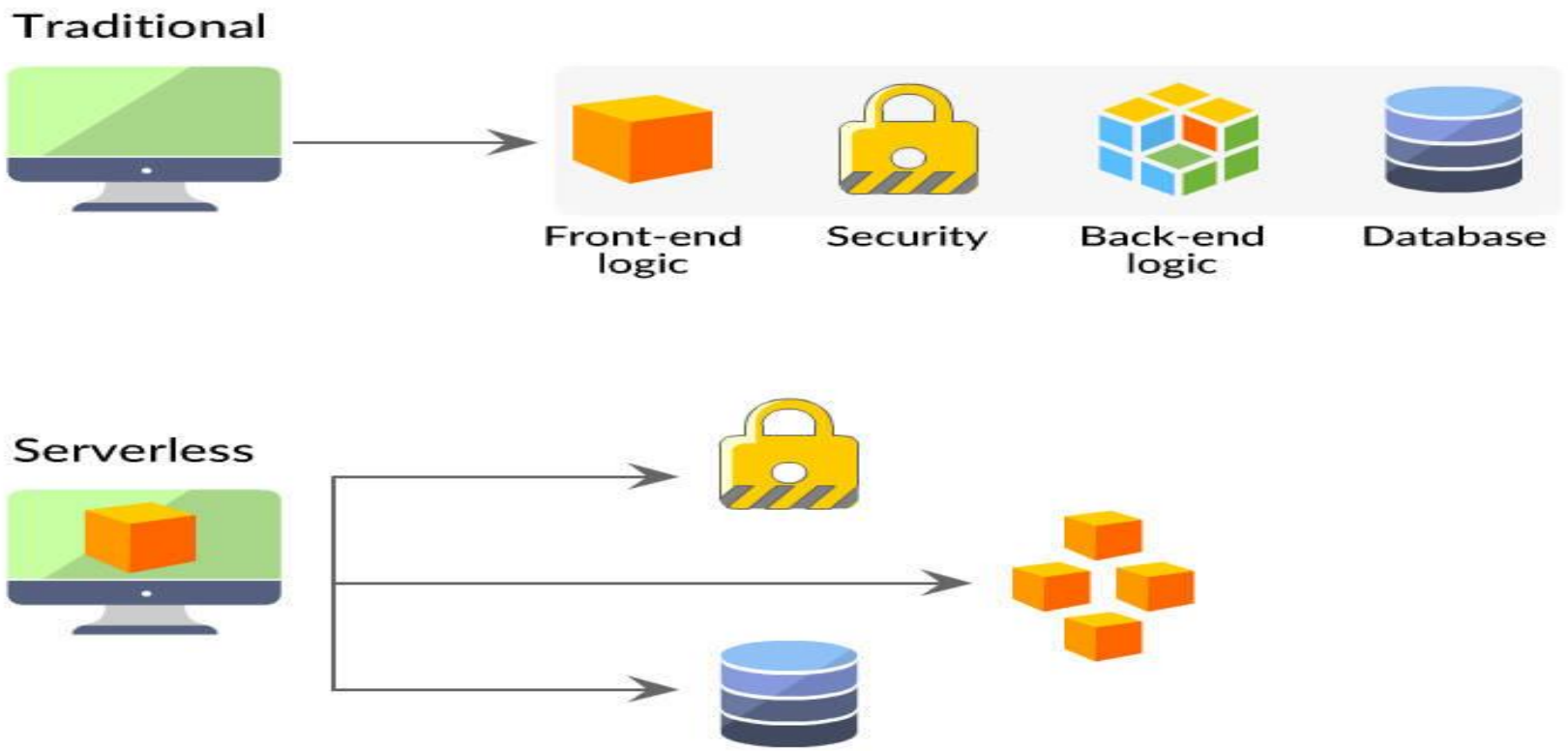
Serverless



source: https://danielhkim.net/2020/02/27/serverless-cloud-computing/

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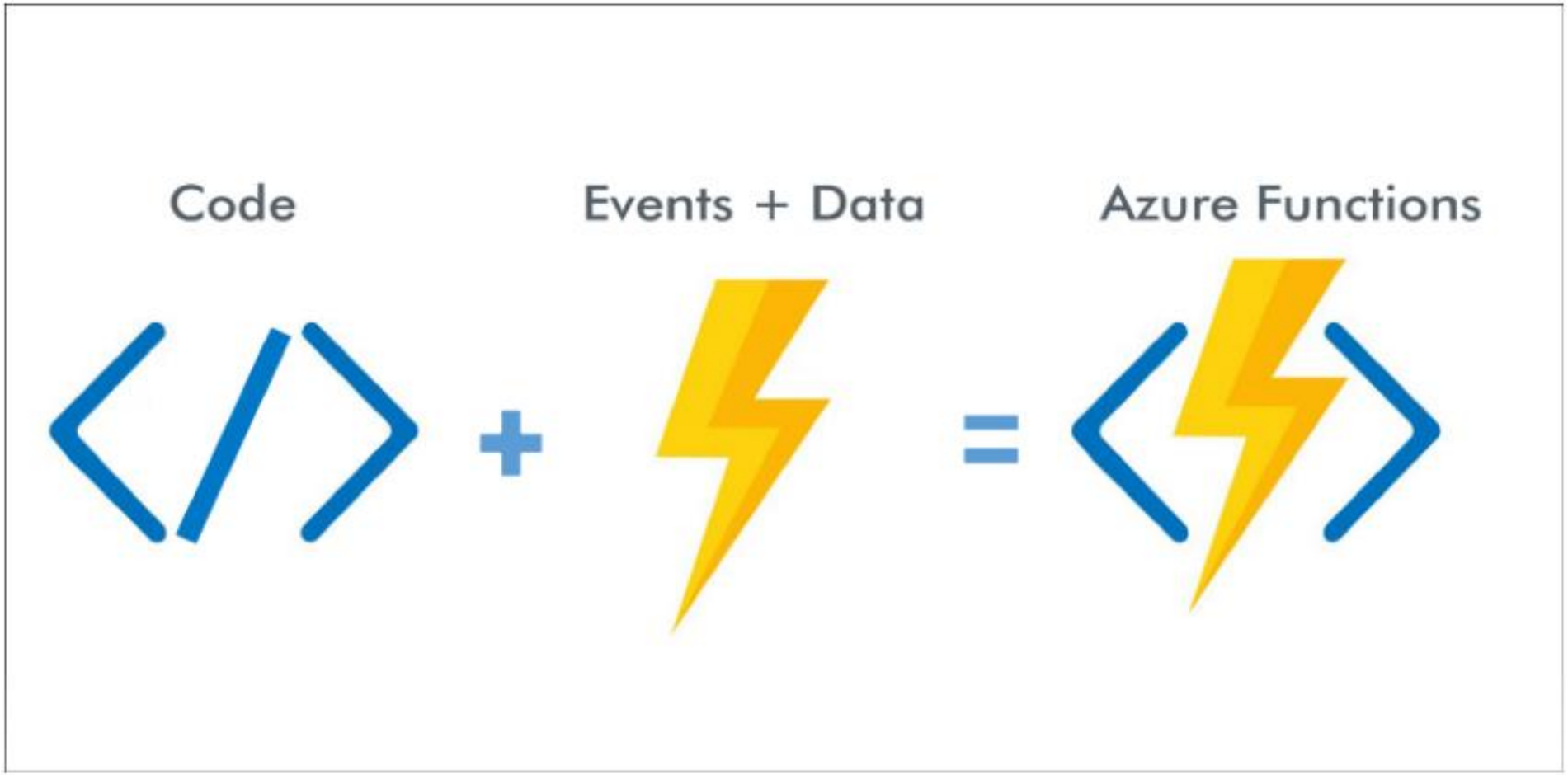
Azure Functions



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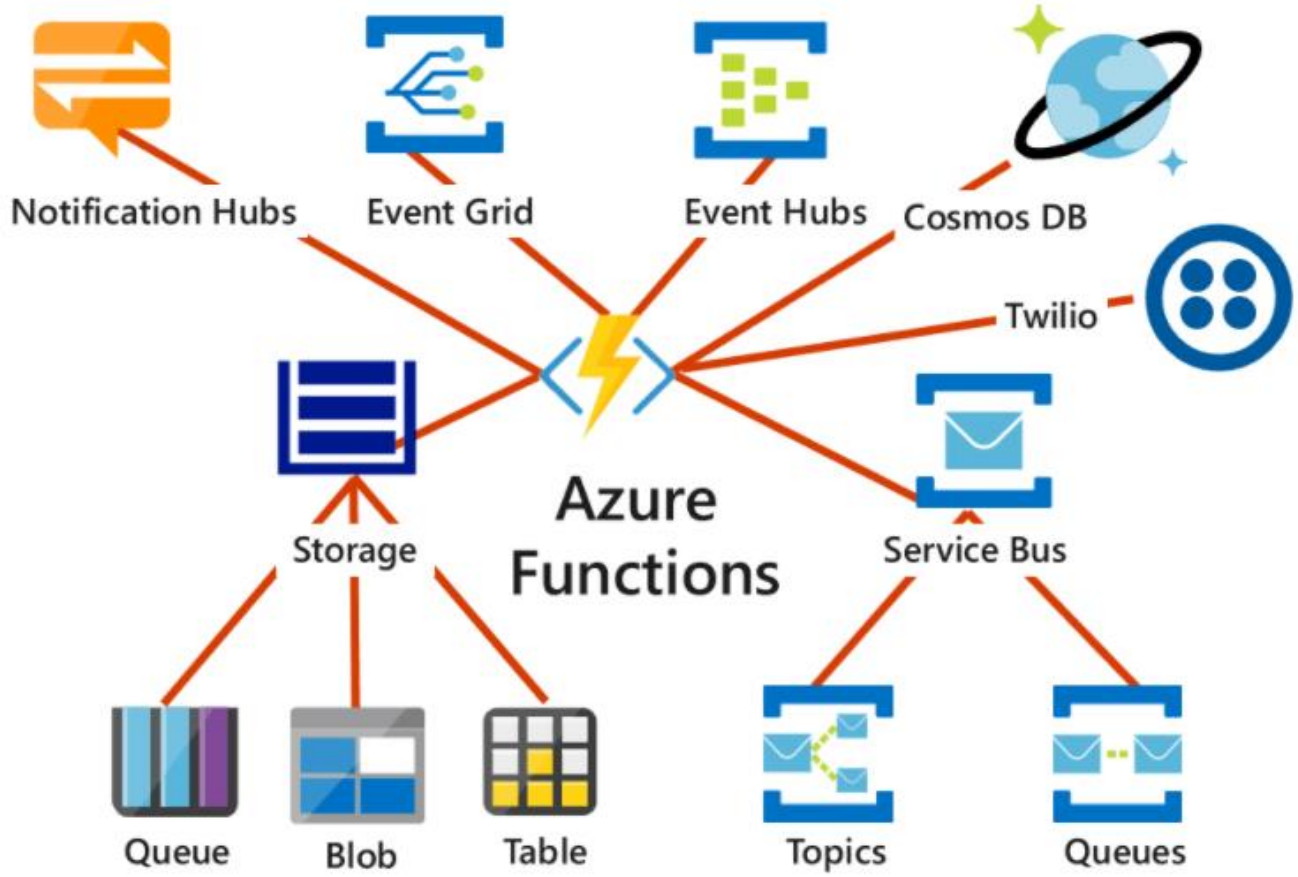
Azure Functions



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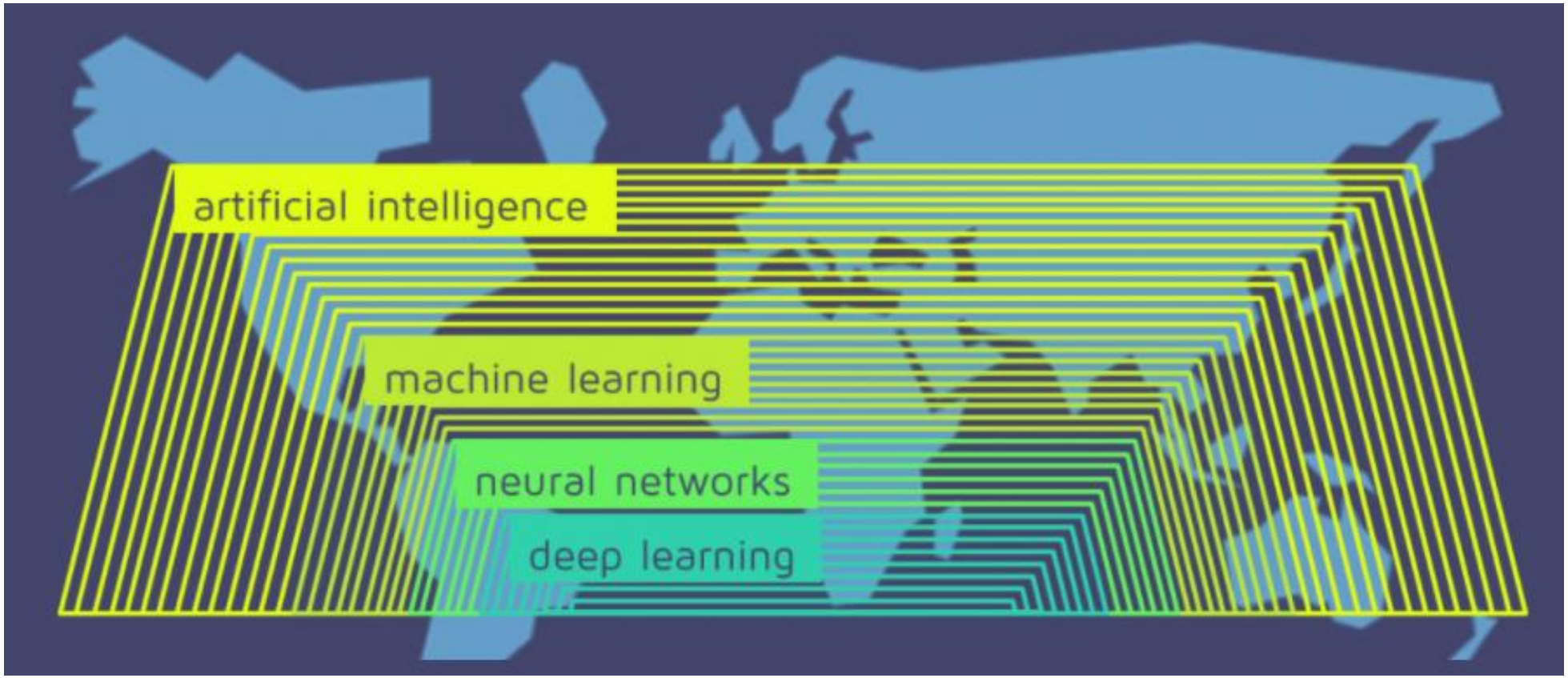
Deep Neural Network



source: https://quantdare.com/what-is-the-difference-between-deep-learning-and-machine-learning/

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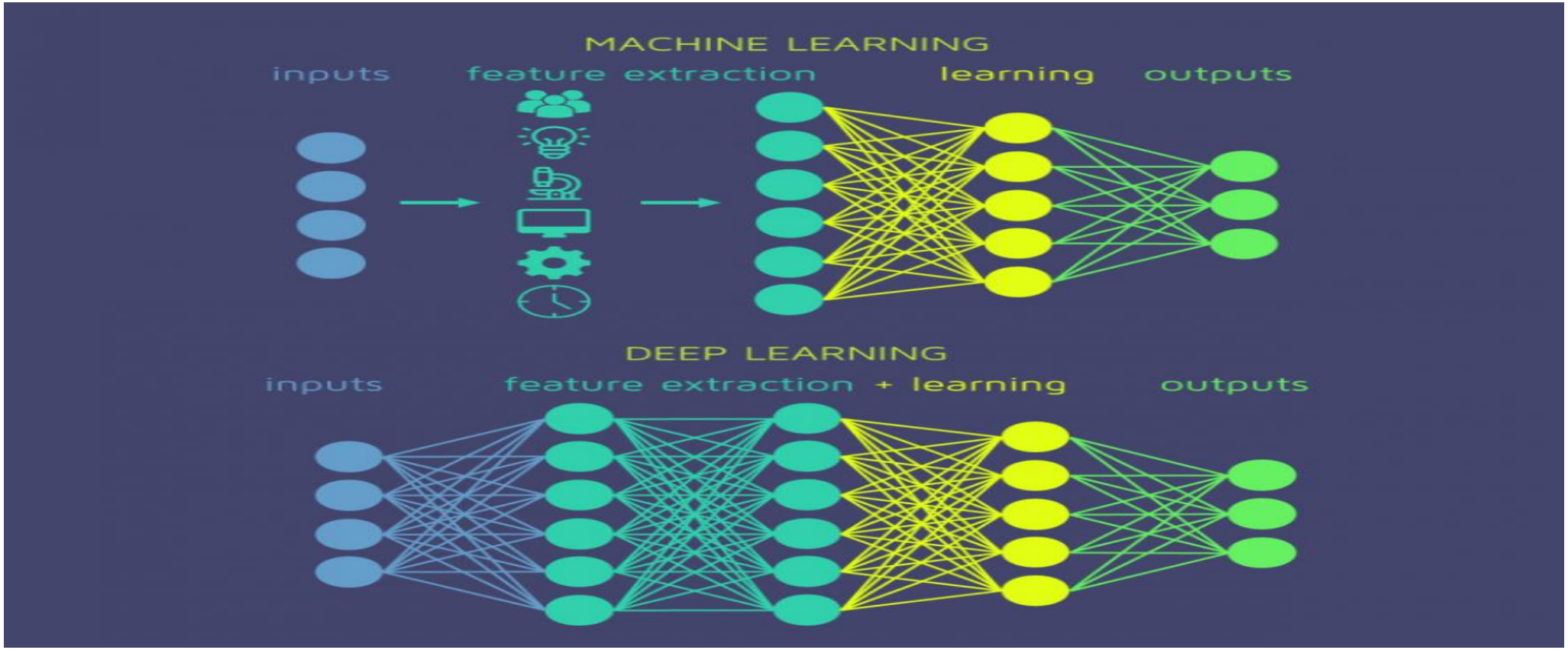
Deep Neural Network



source: https://quantdare.com/what-is-the-difference-between-deep-learning-and-machine-learning/

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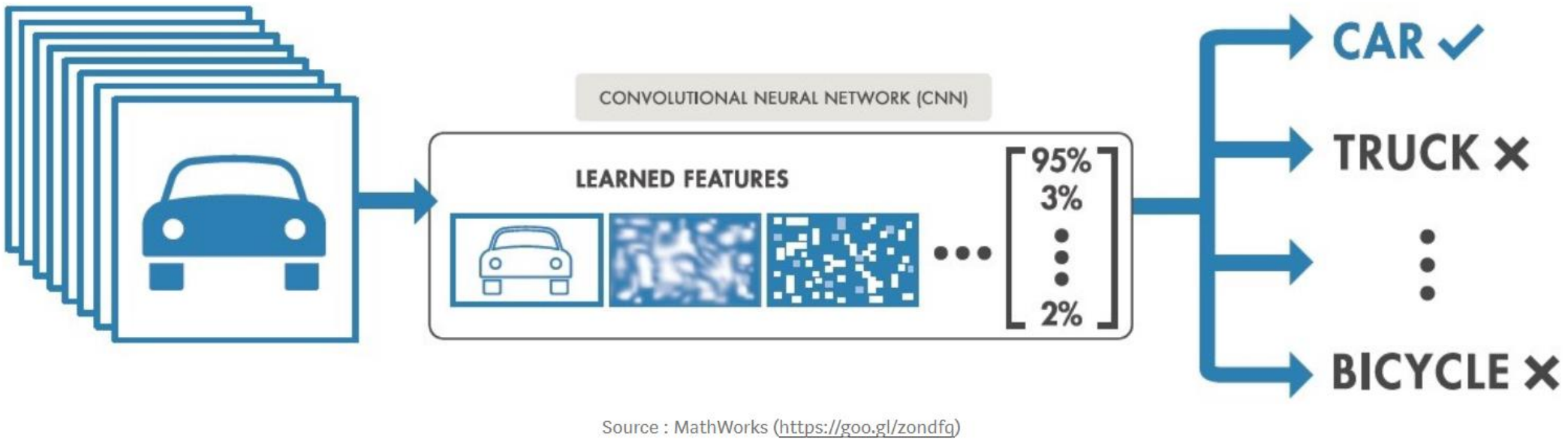
Image Classification



Source : MathWorks (https://goo.gl/zondfq)

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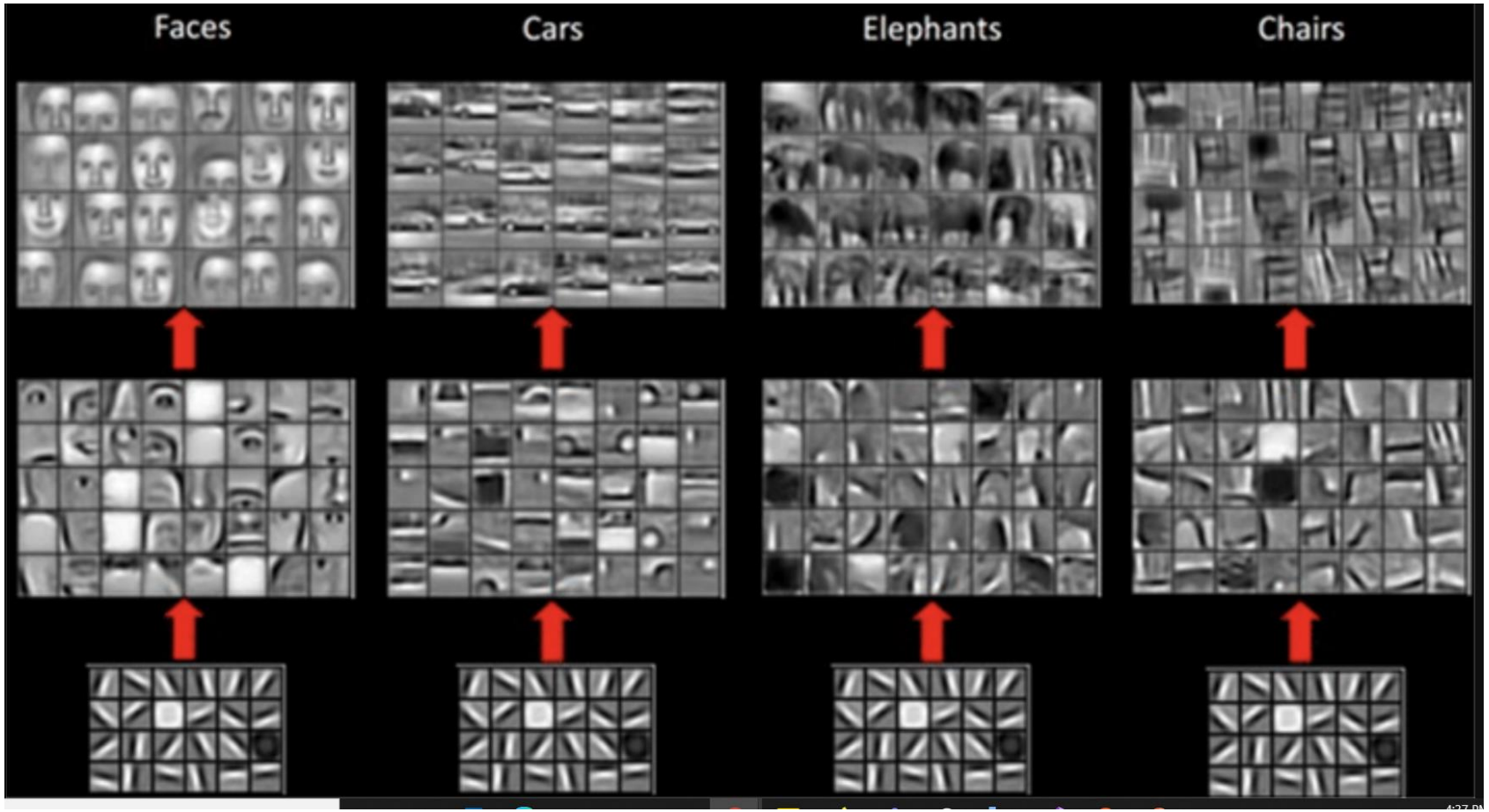
Image Classification



source: https://miro.medium.com/max/1910/1*fLGuAUT5imTIGAeA4zzaWA.png

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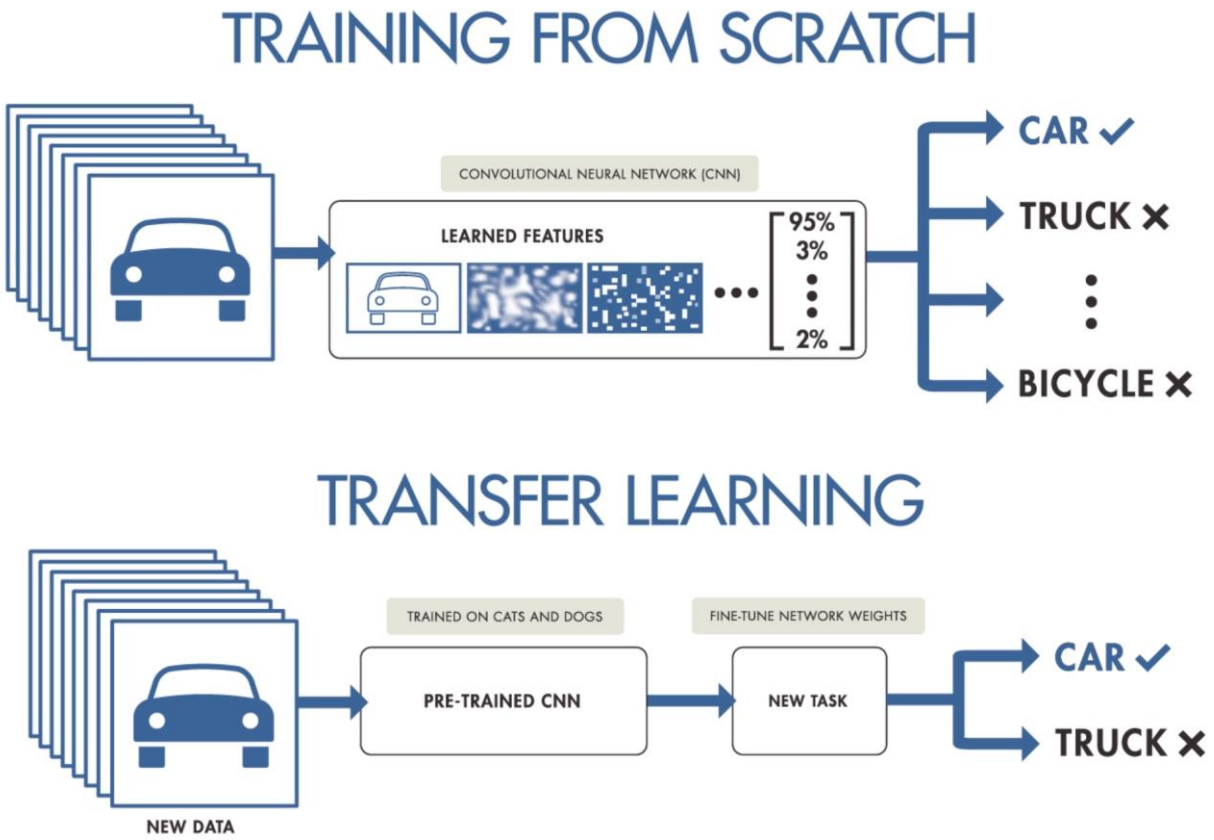
Transfer Learning – MobileNet V2



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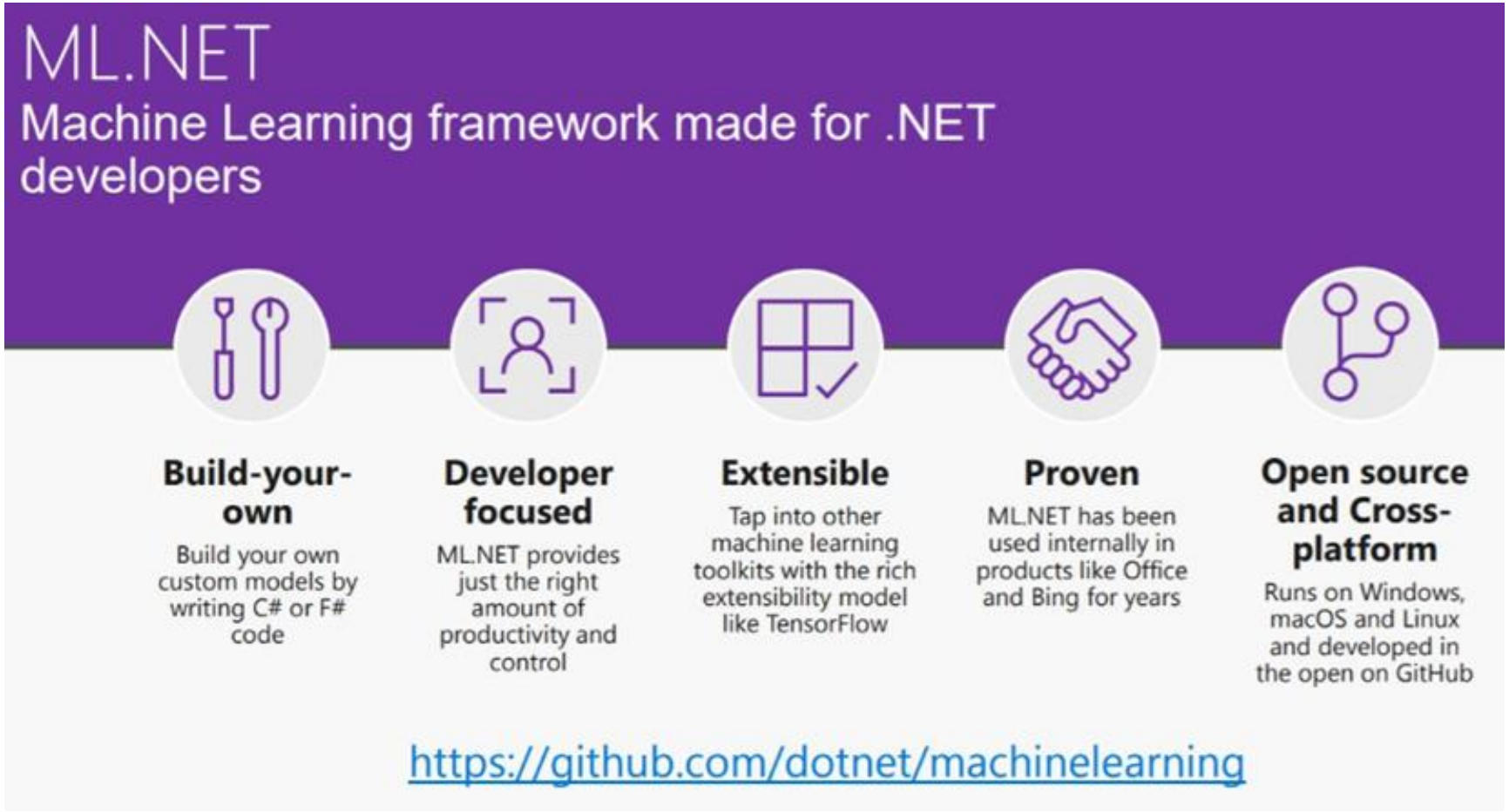
ML.Net



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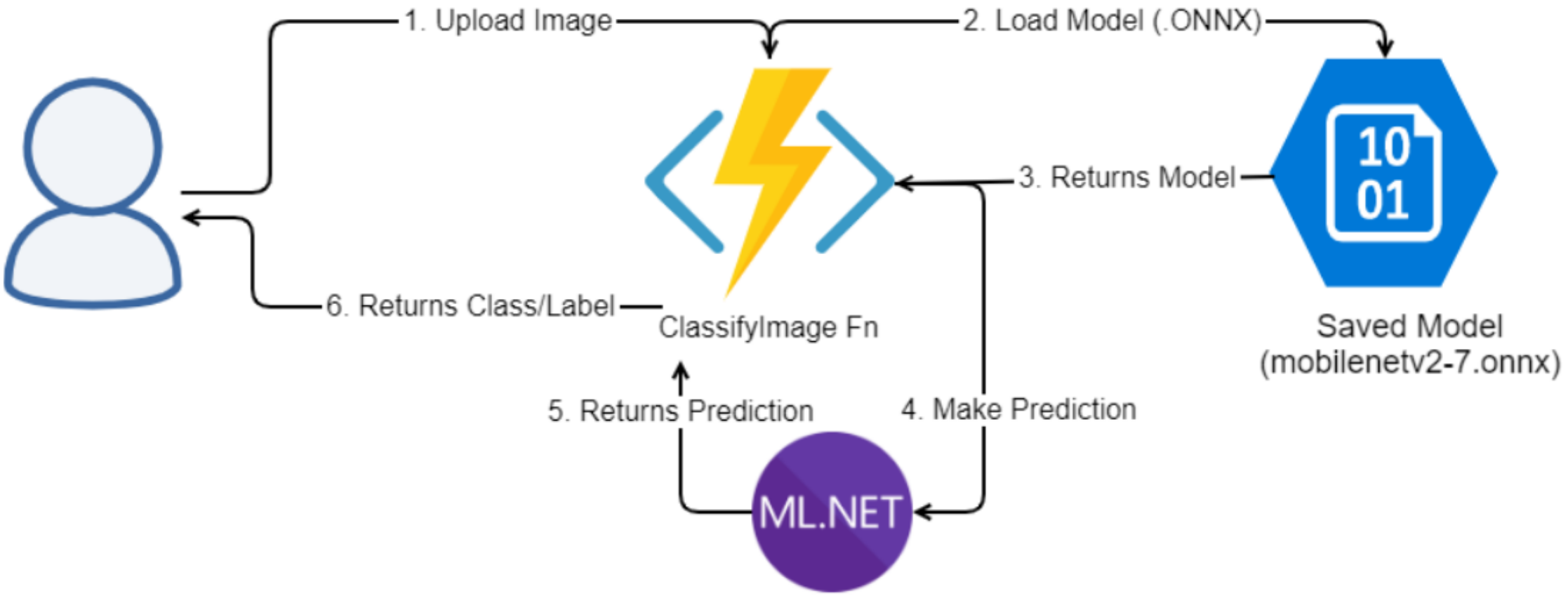
Cloud Architecture



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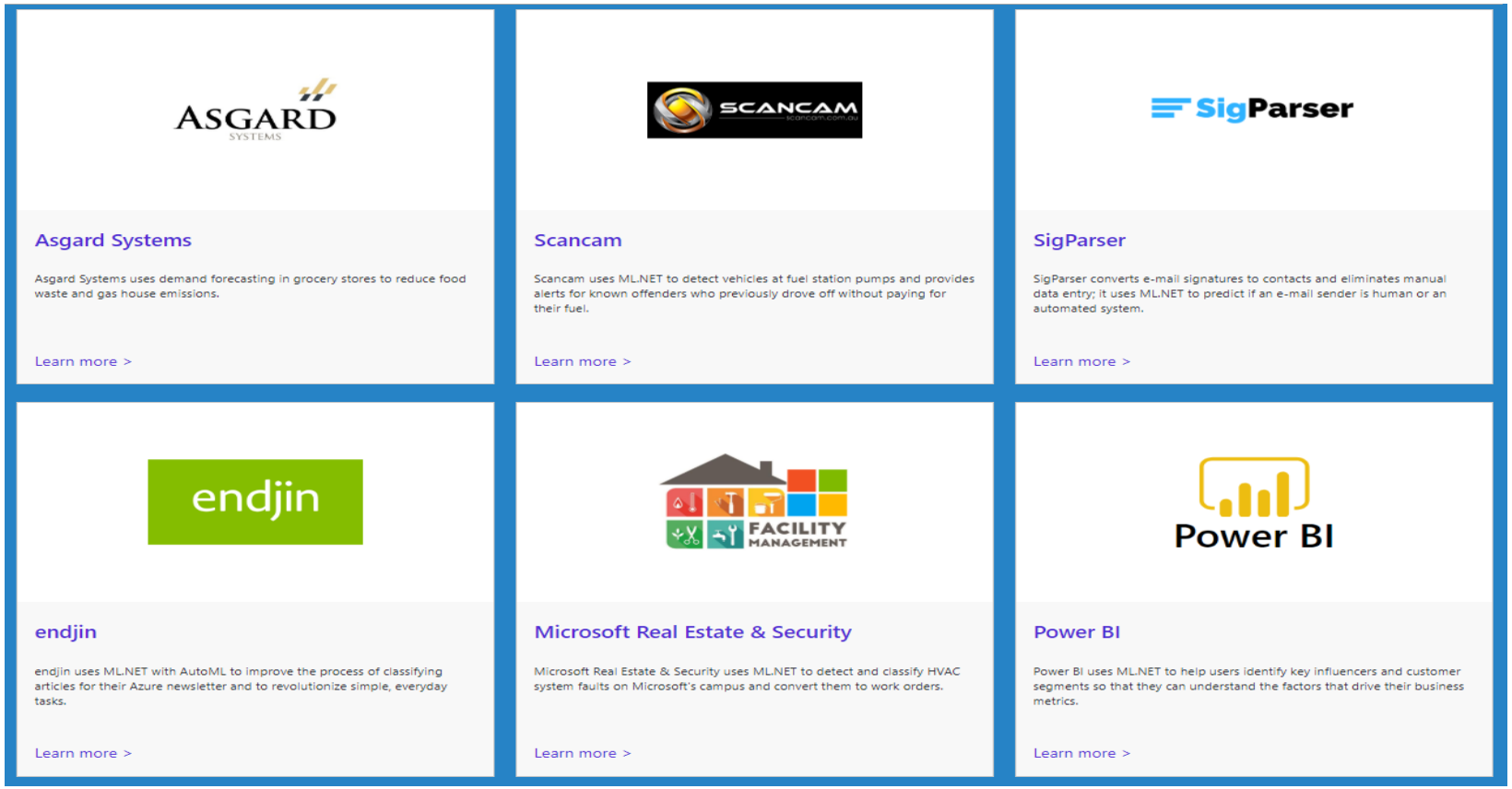
Customer Success Stories – ML.Net



https://dotnet.microsoft.com/apps/machinelearning-ai/ml-dotnet/customers

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Demo

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Resources

Github:
https://github.com/praveenraghuvanshi/tech-sessions/blob/master/04052022-CloudLunchAndLearn

Short URL:
https://bit.ly/3vIiMlD

References

- Develop Azure Functions using Visual Studio
- Multipart data with Azure Functions HttpTriggers
- Tutorial: Train an ML.NET classification model to categorize images
- Train a deep learning image classification model with ML.NET and TensorFlow
- Tutorial: Detect objects using ONNX in ML.NET

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Thank you

Q & A


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