

Deploy ML.NET Models to Azure Container Apps

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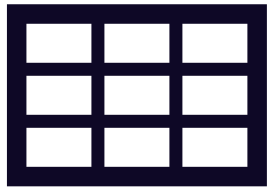
Agenda

- Machine Learning workflow
- What is ML.NET?
- Demo: Train an ML.NET model
- What are Azure Container Apps?
- Demo: Deploy ML.NET model to Azure Container Apps

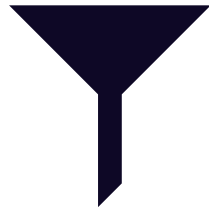
lqdev.me/presentations/reactor-mlnet-container-apps.html

Machine Learning Workflow

Machine Learning Workflow



Get the data



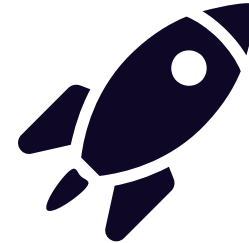
Prepare the data



Train



Evaluate



Deploy



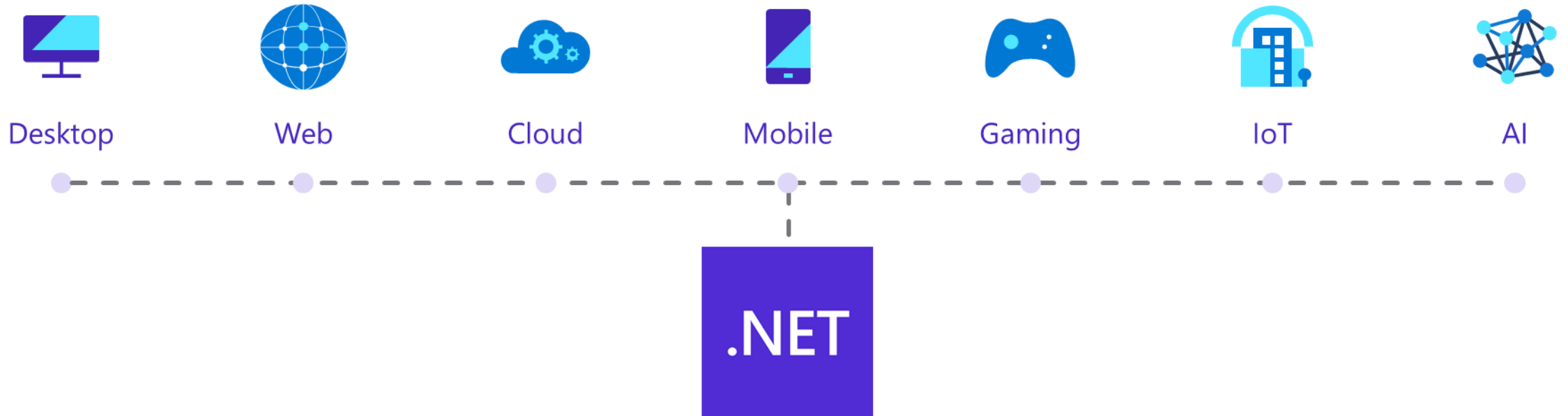
Inferencing

Model Training

Model Consumption

What is ML.NET?

Why .NET?



What is ML.NET?



An **open-source** and **cross-platform** machine learning framework for .NET



Train custom
models



Consume pre-
trained model

ML.NET was built for .NET developers



Stay in .NET ecosystem – use existing C# & F# skills and tooling to integrate ML into .NET apps



Data science & ML experience not required



Easy to go from experimentation to production with the power of .NET

What can you do with ML.NET?

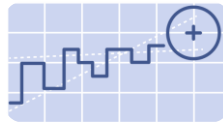
Classification



Regression



Forecasting



Anomaly detection

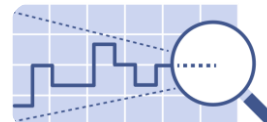
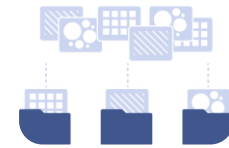


Image classification



Ranking



Clustering



Recommendation



Object detection



ML.NET Platform

Model Builder

(Visual Studio UI)

ML.NET CLI

(Cross-platform global tool)

AutoML.NET API

ML.NET API

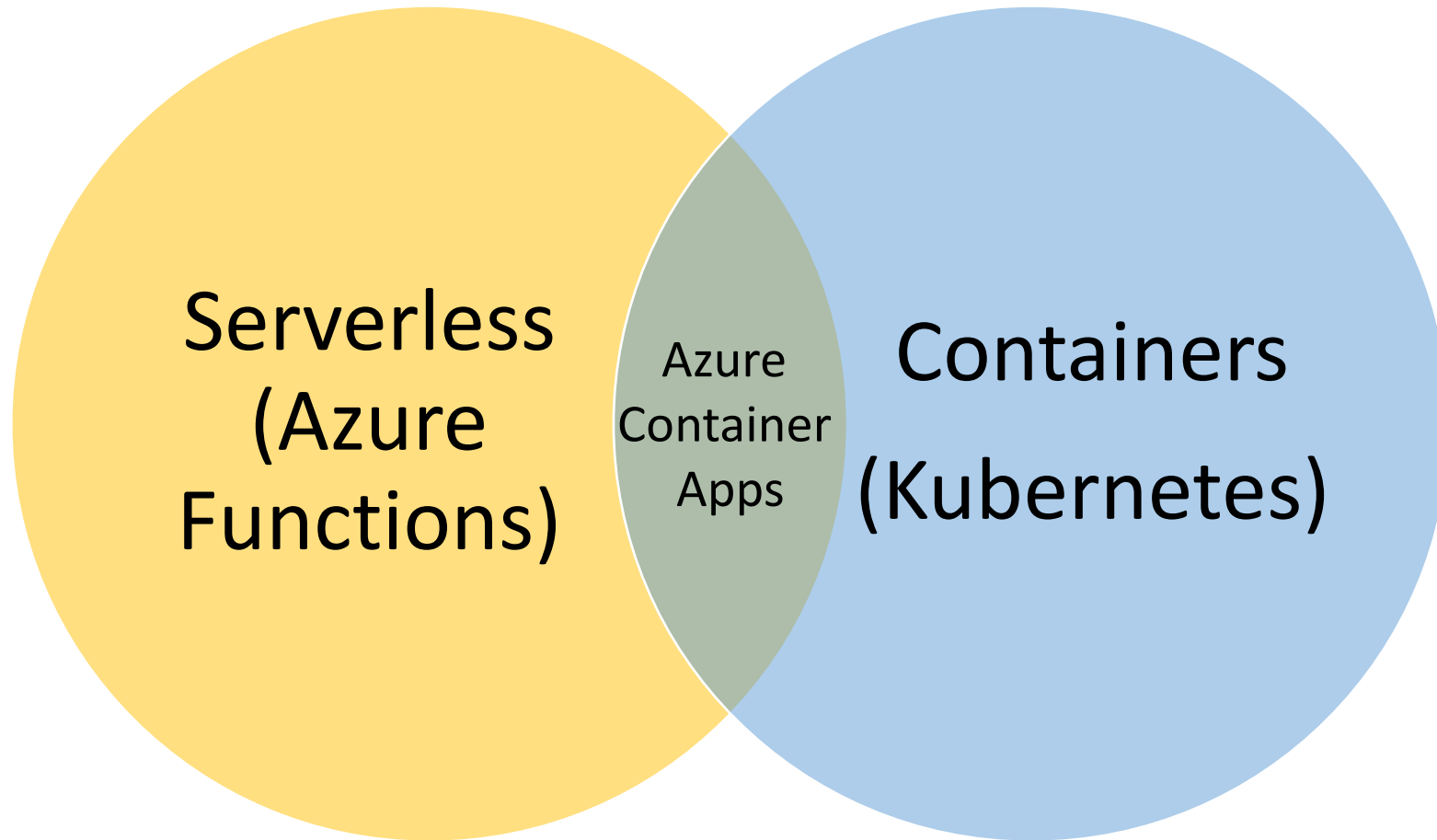
(Microsoft.ML)

Demo: Train ML.NET Model

What are Azure Container Apps?

What are Azure Container Apps?

- A **serverless** application centric hosting service
- Enables executing application code packaged in **any** container and is **unopinionated** about runtime or programming model
- Built on the foundation of the Kubernetes ecosystem



Supported application types

- Deploying API endpoints
- Hosting background processing applications
- Handling event-driven processing
- Running microservices

Azure Container App Advantages

- Run containers from any registry
- Auto-scaling
- Run multiple container versions
- Split traffic

Demo: Deploy ML.NET Model

Roadmap

- Time-series scenario in Model Builder
- Make it easier to consume ONNX models
- Update AutoML API
- Implement Deep Learning Plan
- Define and implement data preparation / data wrangling plan
- For more details, see aka.ms/mlnet-roadmap

Questions?