Getting Started with Azure Machine Learning

INTRODUCTION

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Module Overview

What Is Machine Learning?

Machine Learning vs Traditional Development

Types of Machine Learning

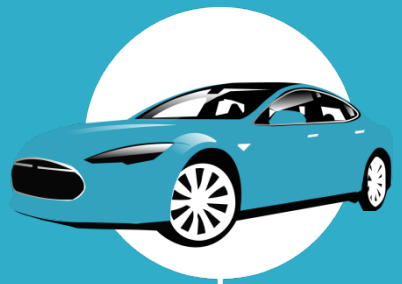
Machine Learning Workflow

Azure

Azure Machine Learning

Course Content

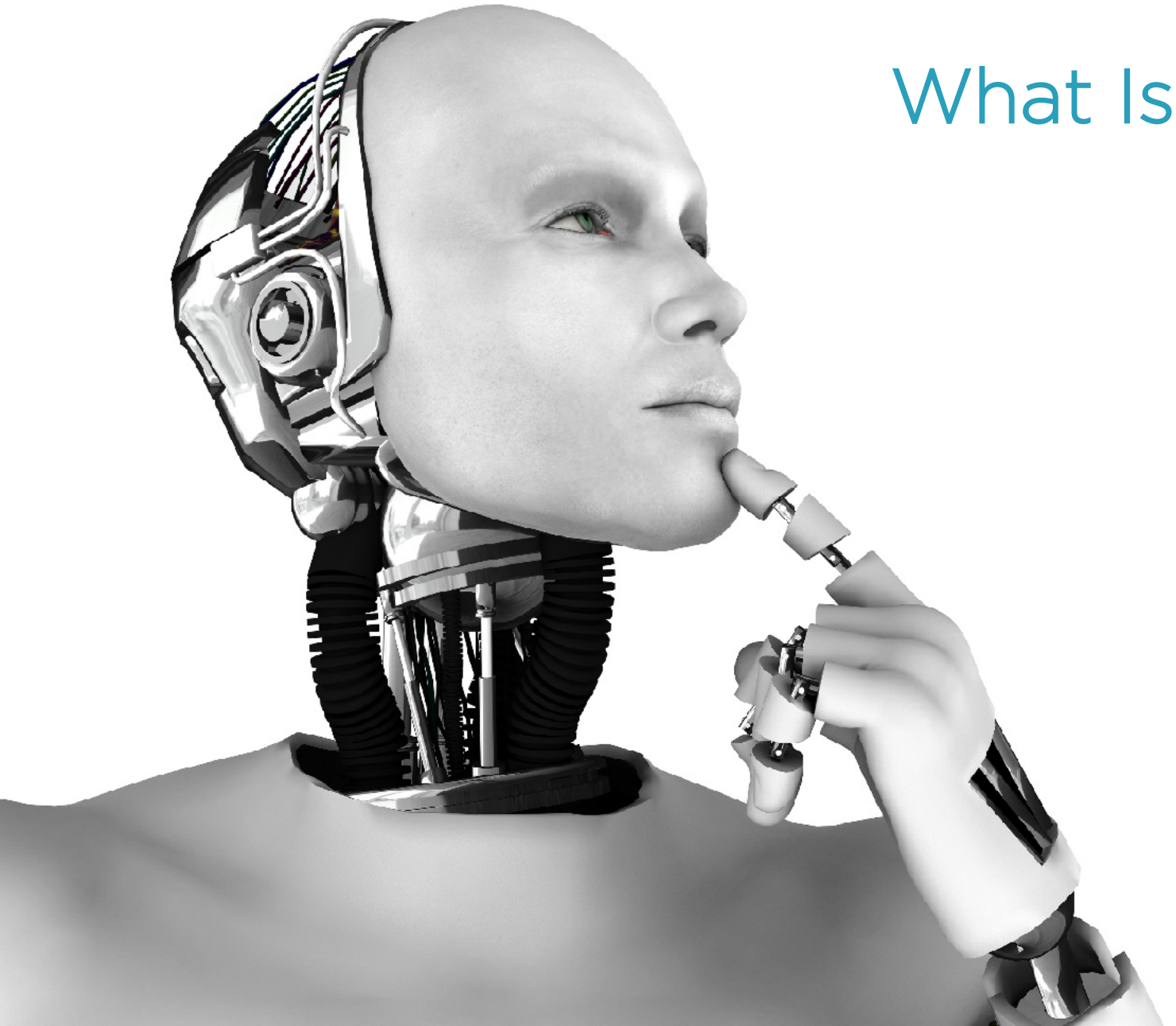
Machine Learning in Action



What is this address?

Should we approve this car loan?

What will people buy?



What Is Machine Learning?

Machine Learning

Building a model from example inputs to make data-driven predictions vs. following strictly static program instructions.

Machine Learning

Building a **model from example inputs** to make data-driven predictions vs. following strictly static program instructions.

Machine Learning

Building a model from example inputs to make data-driven predictions vs. following strictly static program instructions.

Traditional Programming

Traditional Control Logic

if

case

while

until

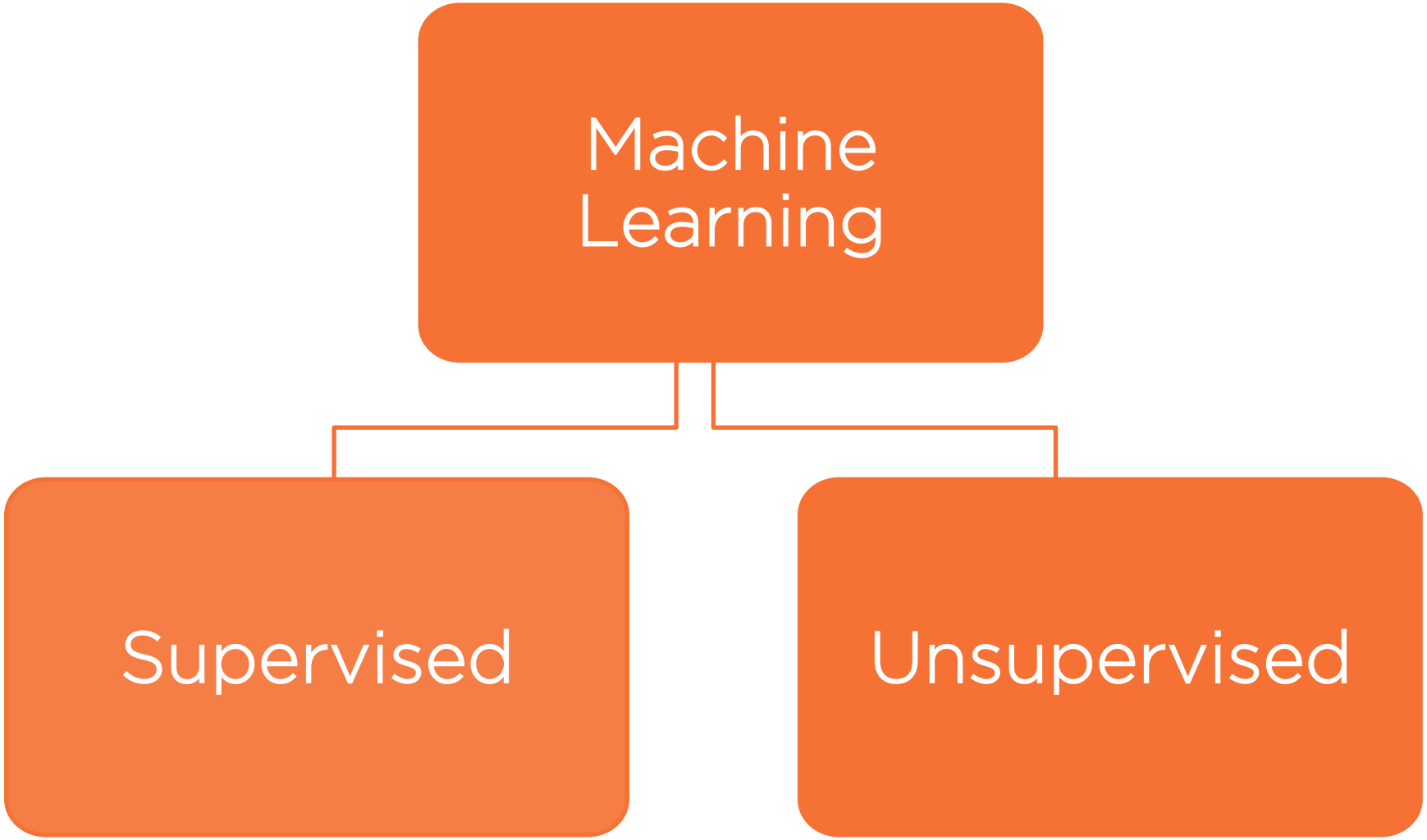
Machine Learning Logic

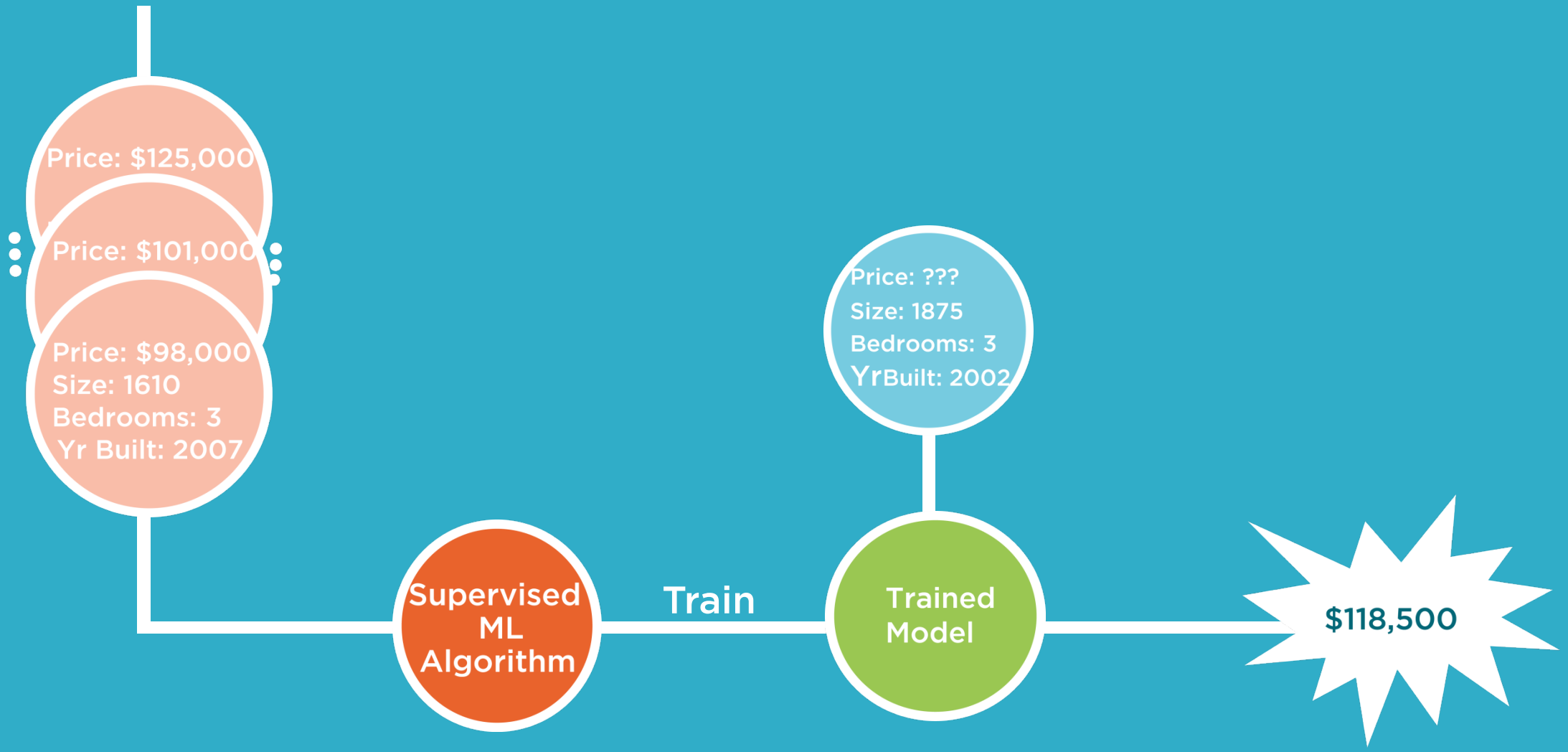
Data

Algorithm

Data Analysis

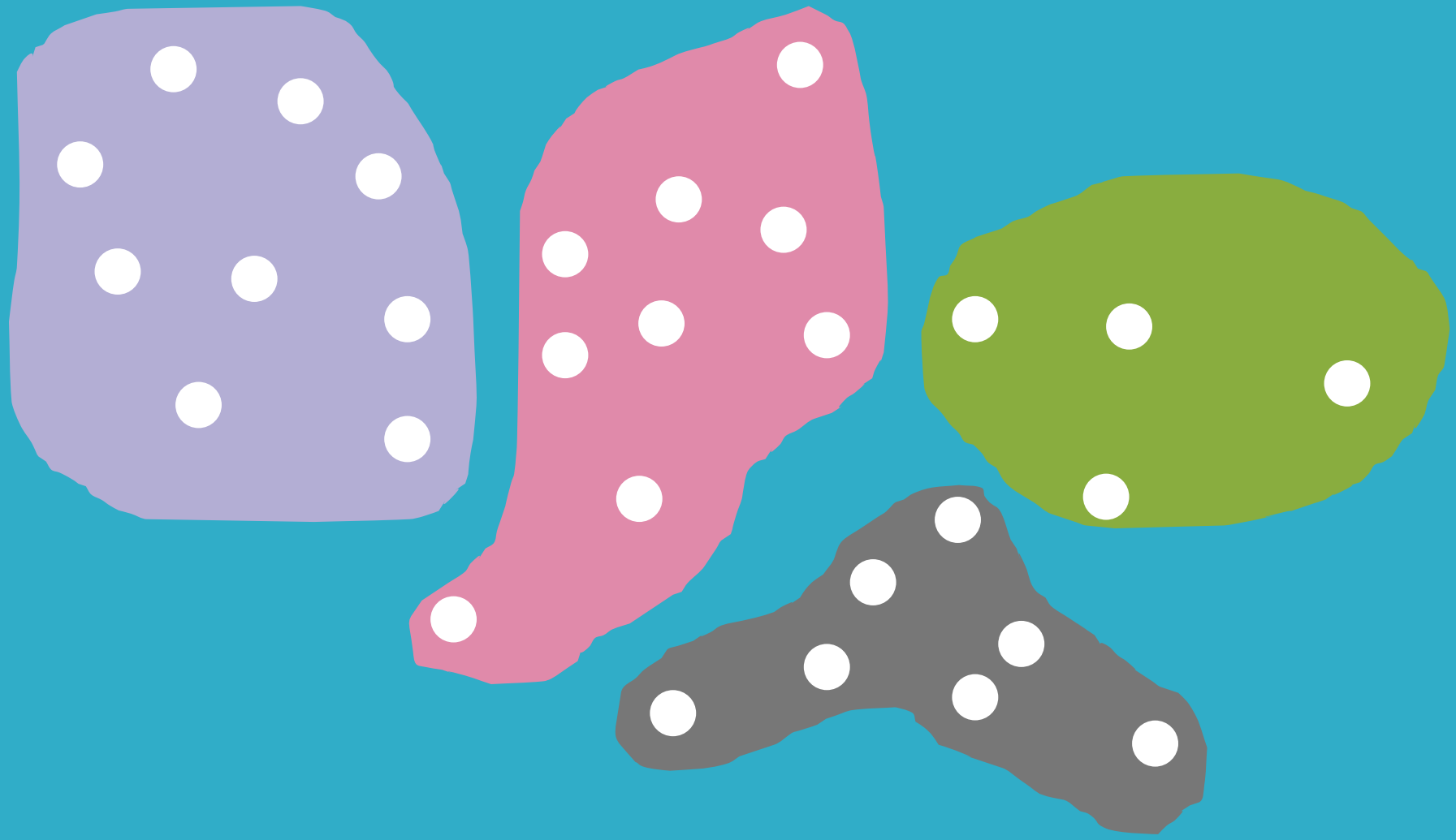
Model

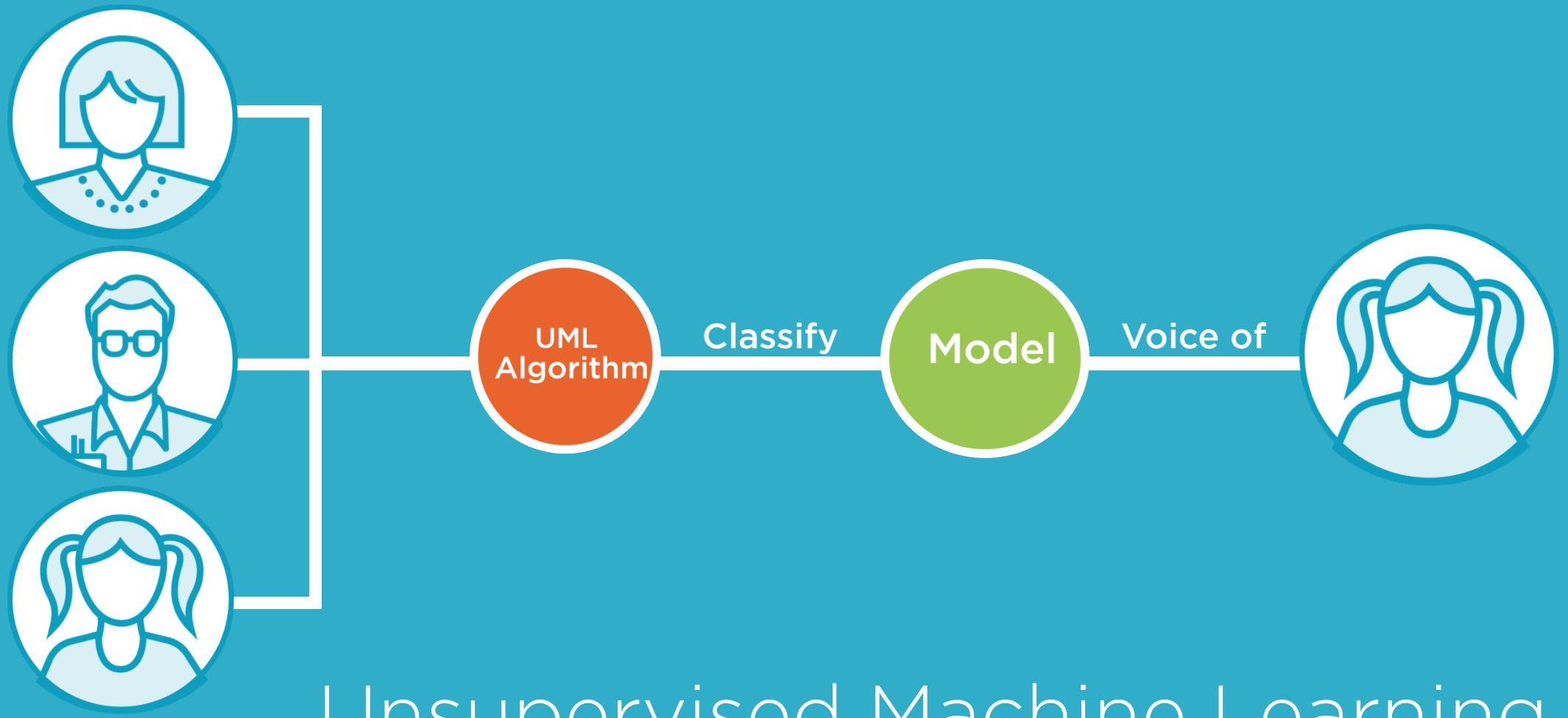

Machine Learning
Supervised
Unsupervised



Supervised Machine Learning

Unsupervised Machine Learning



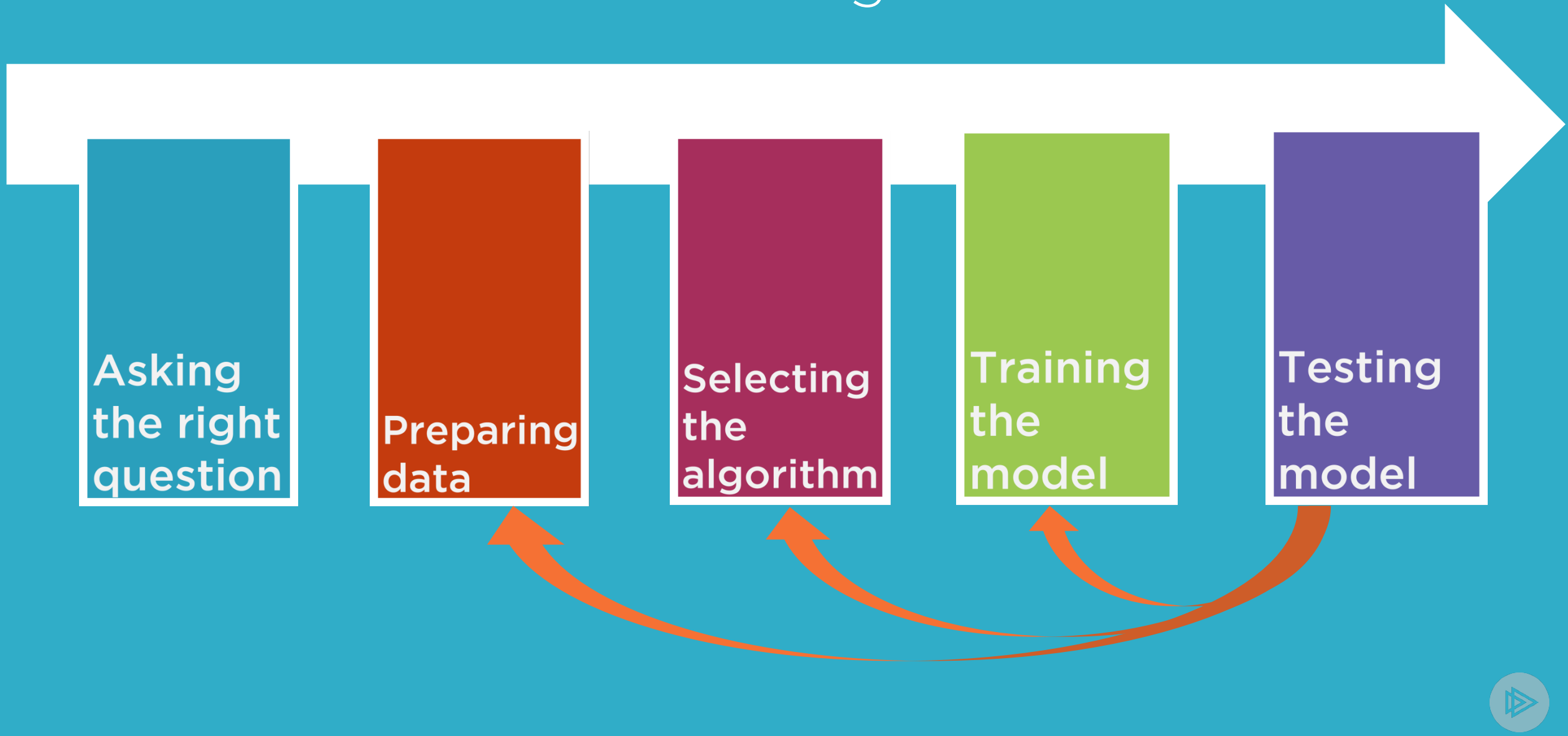


Unsupervised Machine Learning

Machine Learning Technique Comparison

Supervised	Unsupervised
Value prediction	Identify clusters of like data
Needs training data containing value being predicted	Data does not contain cluster membership
Trained model predicts value in new data	Model provides access to data by cluster

Machine Learning Workflow



Machine Learning Workflow Guidelines

Early steps are most important

Each step depends on previous steps

Expect to go backwards

Later knowledge effects previous steps

Data is never as you need it

Data will have to be altered

More data is better

More Data => Better Results

Don't pursue a bad solution

Reevaluate, fix or quit

Think before acting

Understand results before changing data or model

Microsoft Azure

Machine Learning Infrastructure Requirements

Manage Data

Build Machine Learning Solution

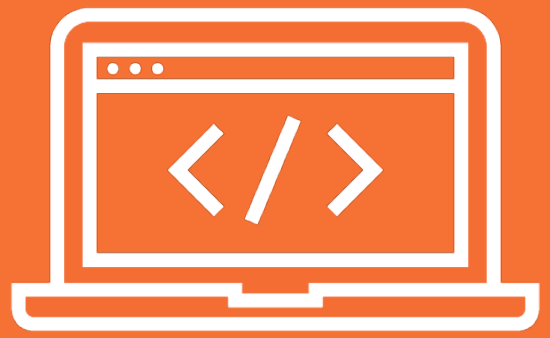
Deploy Solution

Control Access

Maintain Solution

Microsoft Azure is a growing collection of integrated cloud services

Key Azure Services



Computing

- On demand computer resource

Data Storage

- SQL, DocumentDB, Table storage, BLOBs

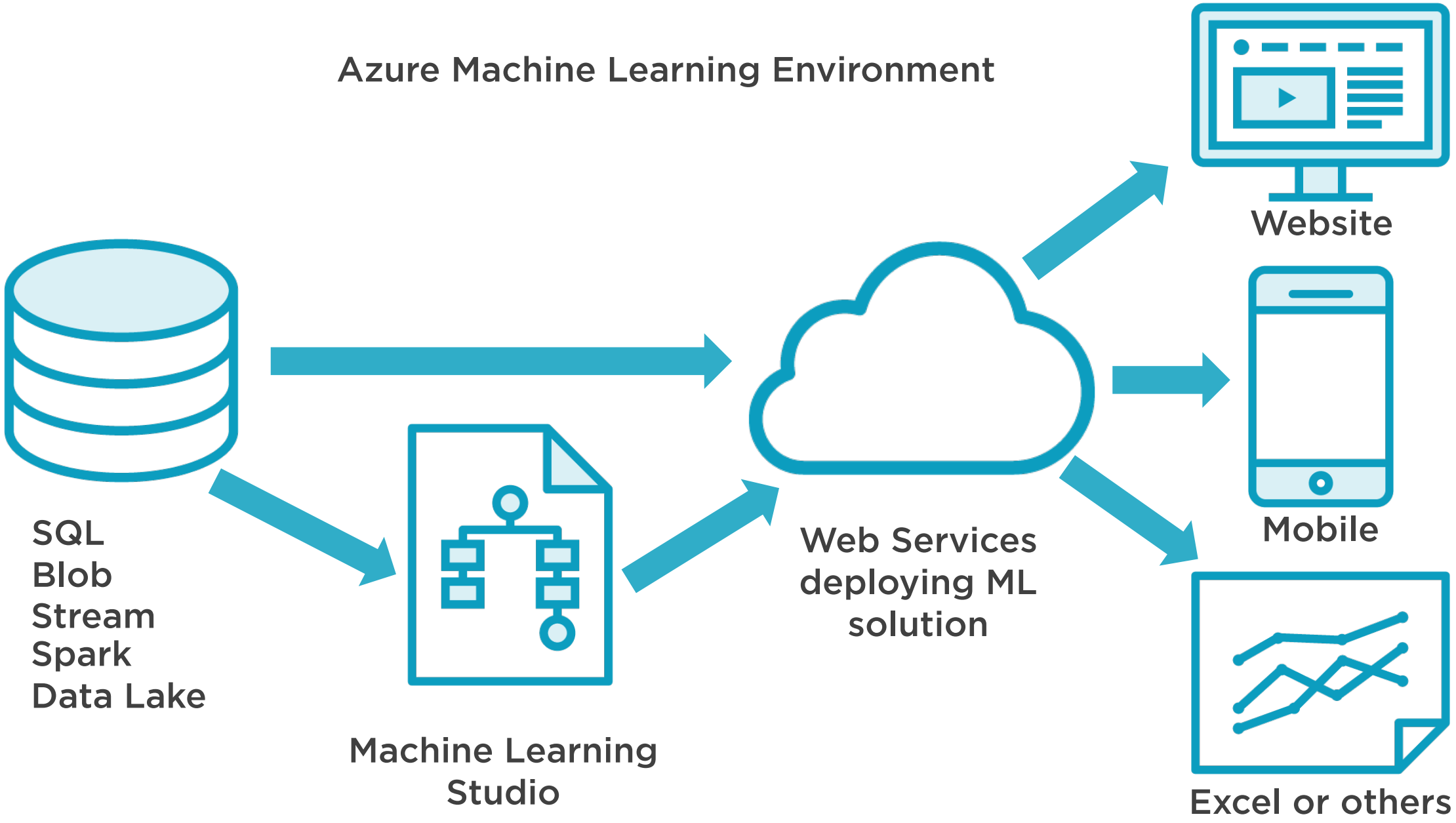
Web

- Web services
- Web applications

Analytics

- Machine Learning

Analytics is the discovery, interpretation, and communication of meaningful patterns in data


Azure Machine Learning Environment
SQL
Blob
Stream
Spark
Data Lake
Machine Learning
Studio
Web Services
deploying ML
solution
Website
Mobile
Excel or others

Your Skills

Not Required	Required
Experience in Machine Learning	Experience with data in tables
Software development experience	Basic math and statistics skills
Advanced statistics or math	Passion to understand

Course Modules

Introduction

Getting to Know Azure ML

Diving Deeper into Azure ML

Evaluating Your Trained Model

Deploying Your Azure ML Solution

Maintaining Your Azure ML Solution

Conclusion