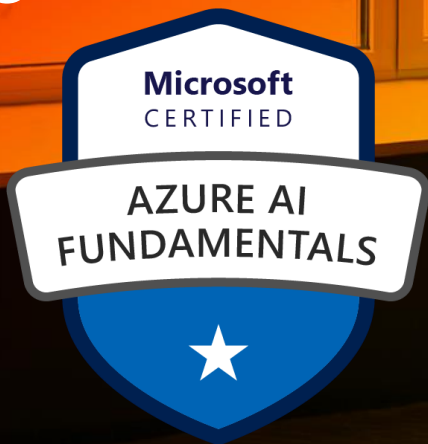


O'REILLY®

Microsoft Azure AI Fundamentals (AI-900) Crash Course



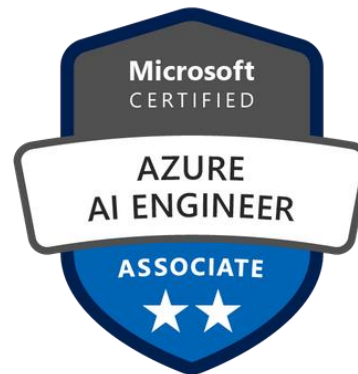


Reza Salehi

Cloud Consultant and Trainer



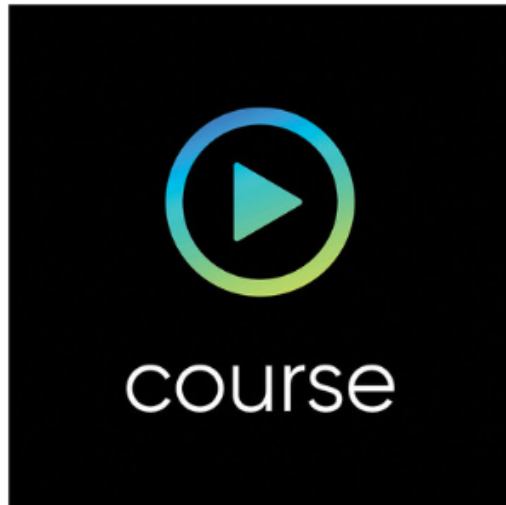
@zaalion



Microsoft Azure Fundamentals (AZ-900) Certification Course

★★★★★ [1 review](#)

By [Reza Salehi](#)



[Continue](#)

TIME TO COMPLETE:
4h 37m

LEVEL:
Beginner

TOPICS:
[Microsoft Azure](#)

PUBLISHED BY:
[O'Reilly Media, Inc.](#)

PUBLICATION DATE:
October 2022

Preparing for certification?

[Take Practice Exam](#) >

<https://learning.oreilly.com/videos/microsoft-azure-fundamentals/0636920797234/>

Azure Cookbook

<https://learning.oreilly.com/library/view/azure-cookbook/9781098135782/>

<https://www.amazon.ca/Azure-Cookbook-Recipes-Maintain-Solutions/dp/1098135792/>

https://www.amazon.com/Azure-Cookbook-Recipes-Maintain-Solutions/dp/1098135792

O'REILLY®

Azure Cookbook

Recipes to Create and Maintain Cloud Solutions in Azure



Reza Salehi



Course Overview





AI-900 Crash Course

- Describe Artificial Intelligence workloads and considerations (15-20%)
- Describe fundamental principles of machine learning on Azure (20-25%)
- Describe features of computer vision workloads on Azure (15–20%)
- Describe features of Natural Language Processing (NLP) workloads on Azure (15-20%)
- Describe features of generative AI workloads on Azure (15–20%)



Course Repository

<https://github.com/zaalion/oreilly-ai-900>

Congratulations, you passed!

You've renewed your Microsoft Certified: Azure Security Engineer Associate and have extended it by **one year**.



[See your results](#)

oreilly-ai-900

Public



Pin



Unwatch

2



master ▾



1 branch



0 tags

Go to file

Add file ▾

<> Code ▾



rezasalehinewsig Oct 2023 updates



Demo

Oct 2023 updates



.gitignore

Updated slide deck



O'Reilly-Branded-RezaSalehi-AI-900.p... Oct 2023 updates

Help people interested in this repository understand your project by adding a

Local

Codespaces



Clone



HTTPS

SSH

GitHub CLI

`https://github.com/zaalion/oreilly-ai-900.git`



Use Git or checkout with SVN using the web URL.



Open with GitHub Desktop



Open with Visual Studio



Download ZIP



Code 55% faster with AI pair programming.

Start my free trial

Don't show again



EXAMS

Exam AI-900: Microsoft Azure AI Fundamentals

This exam is an opportunity to demonstrate knowledge of machine learning (ML) and artificial intelligence (AI) concepts and related Microsoft Azure services. Candidates for this exam should have familiarity with Exam AI-900's self-paced or instructor-led learning material.

This exam is intended for candidates with both technical and non-technical backgrounds. Data science and software engineering experience are not required; however, awareness of cloud basics and client-server applications would be beneficial.

Azure AI Fundamentals can be used to prepare for other Azure role-based certifications like Azure Data Scientist Associate or Azure AI Engineer Associate, but it is not a prerequisite for any of them.



You may be eligible for ACE college credit if you pass this certification exam. See [ACE college credit for certification exams](#) for

Important

The English language version of this exam will be updated on November 2, 2023. Review the study guide linked in the “Tip” box for details on upcoming changes. If a localized version of this exam is available, it will be updated approximately eight weeks after this date. While Microsoft makes every effort to update localized versions as noted, there may be times when the localized versions of this exam are not updated on this schedule.

Passing score: 700. [Learn more about exam scores.](#)

Tip


- Review the [AI-900 study guide](#)  to help you prepare for the exam
- Demo the exam experience by visiting our [exam sandbox](#) 

Note

Cognitive Services has been renamed to Azure AI Services. Individual services have also been renamed. These changes will appear on the exam in late 2023. [Learn more about Azure AI services.](#)

Part of the requirements for: [Microsoft Certified: Azure AI Fundamentals](#)

Related exams: none

[Go to Learn Profile](#) 



Two ways to prepare

Self-paced

Instructor-led

Items in this collection

LEARNING PATH

Microsoft Azure AI Fundamentals: Get started with artificial intelligence

2 Modules

Beginner • AI Engineer • Bot Service

Start >



+ Save

LEARNING PATH

Microsoft Azure AI Fundamentals: Explore visual tools for machine learning

4 Modules

Beginner • AI Engineer • Azure



+ Save

LEARNING PATH

Describe Artificial Intelligence workloads and considerations (15–20%)





Describe Artificial Intelligence workloads and considerations (15-20%)

- Identify features of common AI workloads
- Identify guiding principles for responsible AI



Identify Features of Common AI Workloads

- Identify features of data monitoring and anomaly detection workloads [see [1](#) [2](#) [3](#) [4](#) [5](#)]
- Identify features of [content moderation](#) and [personalization](#) workloads
- Identify computer vision workloads [see [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#)]
- Identify natural language processing workloads [see [0](#) [1](#) [2](#) [3](#) [4](#) [5](#)]
- Identify knowledge mining workloads [see [1](#) [2](#) [3](#) [4](#) [5](#)]
- Identify [document intelligence](#) workloads [see [1](#)]
- Identify features of [generative AI](#) workloads



Identify Guiding Principles for Responsible AI

- Describe considerations for fairness in an AI solution [see [1](#) [2](#) [3](#)]
- Describe considerations for reliability and safety in an AI solution [see [1](#)]
- Describe considerations for privacy and security in an AI solution [see [1](#)]
- Describe considerations for inclusiveness in an AI solution [see [1](#)]
- Describe considerations for transparency in an AI solution [see [1](#)]
- Describe considerations for accountability in an AI solution [see [1](#)]



Describe Fundamental Principles of Machine Learning on Azure (20–25%)





Describe Fundamental Principles of Machine Learning on Azure (20-25%)

- Identify common machine learning techniques
- Describe core machine learning concepts
- Describe Azure Machine Learning capabilities



Identify Common Machine Learning Techniques

- Identify regression machine learning scenarios [see [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#)]
- Identify classification machine learning scenarios [see [1](#) [2](#)]
- Identify clustering machine learning scenarios [see [1](#) [2](#)]
- Identify features of deep learning techniques [see [1](#) [2](#)]



Describe Core Machine Learning Concepts

- Identify features and labels in a dataset for machine learning [see 1]
- Describe how training and validation datasets are used in machine learning [see 1 2]



Describe Azure Machine Learning Capabilities

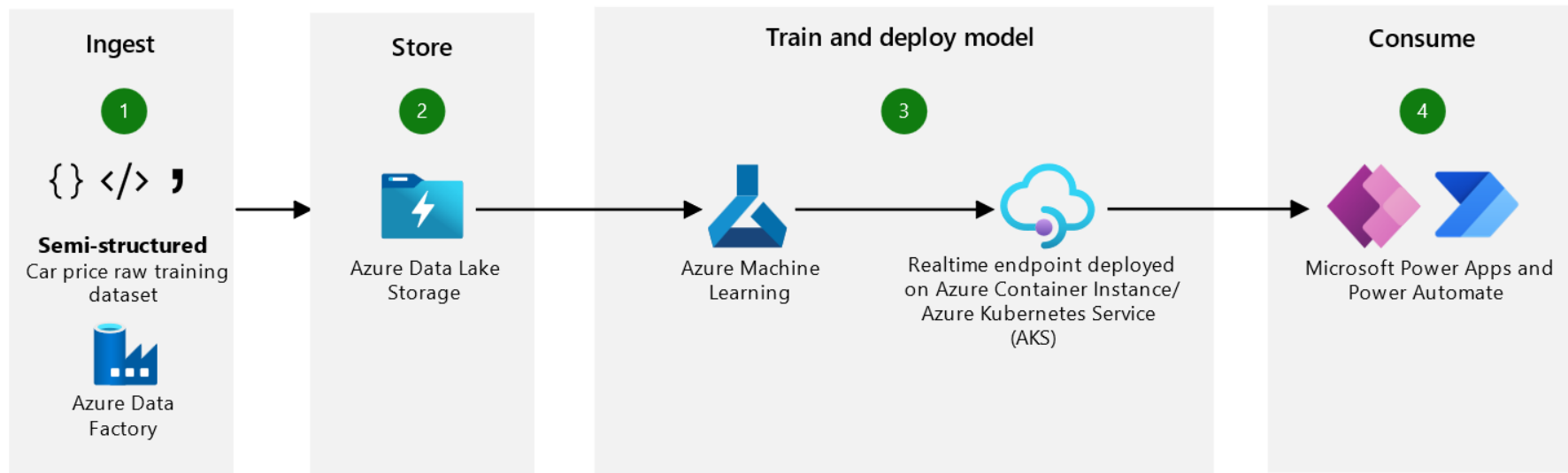
- Describe capabilities of Automated machine learning [see 1 2]
- Describe data and compute services for data science and machine learning
- Describe model management and deployment capabilities in Azure Machine Learning [see 1 2]

Creating Your Own ML Model

1. Collect training datasets; 1000+ cat and not-cat photos
2. Cleanup the collected training data
3. Choose the right ML model for your use case
4. Train the model and verify the result
5. Deploy the read-to-use model to your application
6. Start using the model with the data in question



Creating Your Own ML Model





Describe Features of Computer Vision Workloads on Azure (15– 20%)





Describe Features of Computer Vision Workloads on Azure (15–20%)

- Identify common types of computer vision solutions
- Identify Azure tools and services for computer vision tasks



Identify Common Types of Computer Vision Solutions

- Identify features of image classification solutions [see 1 2]
- Identify features of object detection solutions [see 1 2]
- Identify features of optical character recognition solutions [see 1 2]
- Identify features of facial detection and facial analysis solutions [see 1 2 3]



Identify Azure Tools and Services for Computer Vision Tasks

- Describe capabilities of the Azure AI Vision service [see [1](#) [2](#)]
Describe capabilities of the Azure AI Face detection service [see [1](#) [2](#)]
- Describe capabilities of the Azure AI Video Indexer service [see [1](#) [2](#)]



Describe Features of Natural Language Processing (NLP) Workloads on Azure (15–20%)





Describe Features of Natural Language Processing (NLP) Workloads on Azure (15-20%)

- Identify features of common NLP workload scenarios
- Identify Azure tools and services for NLP workloads



Identify Features of Common NLP Workload Scenarios

- Identify features and uses for key phrase extraction [see [1](#) [2](#)]
- Identify features and uses for entity recognition [see [1](#)]
- Identify features and uses for sentiment analysis [see [1](#)]
- Identify features and uses for language modeling [see [1](#) [2](#)]
- Identify features and uses for speech recognition and synthesis [see [1](#) [2](#)]
- Identify features and uses for translation [see [1](#) [2](#)]



Identify Azure Tools and Services for NLP Workloads

- Describe capabilities of the Azure AI Language service [see [1](#)]
- Describe capabilities of the Azure AI Speech service [see [1](#)]
- Describe capabilities of the Azure AI Translator service [see [1](#)]

Describe features of generative AI workloads on Azure (15–20%)





Describe features of generative AI workloads on Azure (15–20%)

- Identify features of generative AI solutions
- Identify capabilities of Azure OpenAI Service



Identify Features of Generative AI Solutions

- Identify features of generative AI models [see 1]
- Identify common scenarios for generative AI [see 1 2]
- Identify responsible AI considerations for generative AI



Identify Capabilities of Azure OpenAI Service

- Describe natural language generation capabilities of Azure OpenAI Service
- Describe code generation capabilities of Azure OpenAI Service [see 1]
- Describe image generation capabilities of Azure OpenAI Service

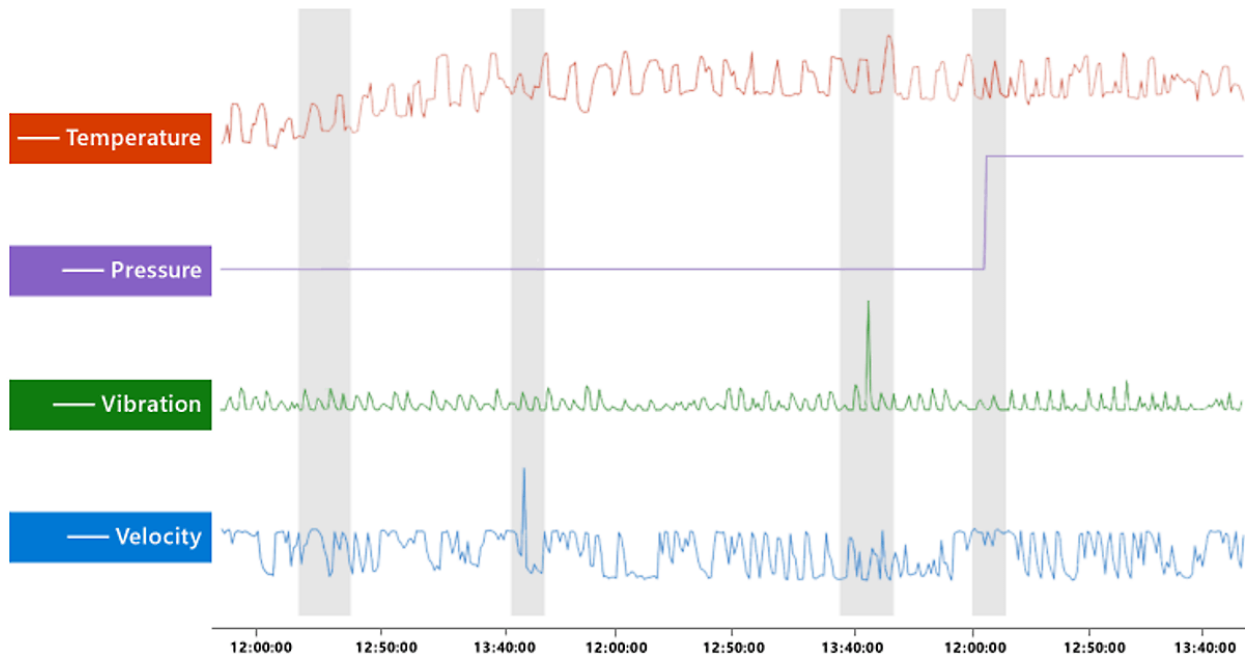


AI Workloads



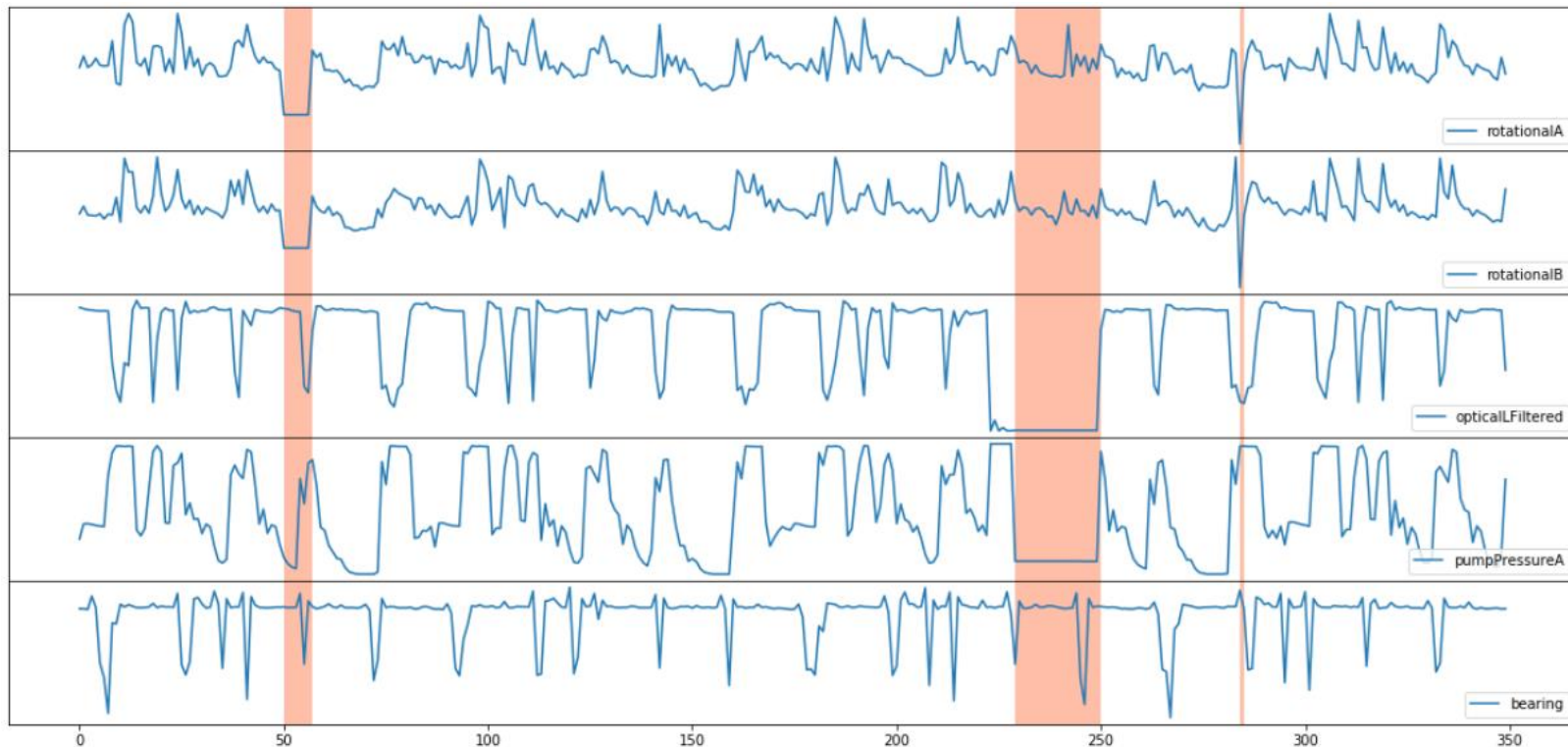


Anomaly Detection Workloads



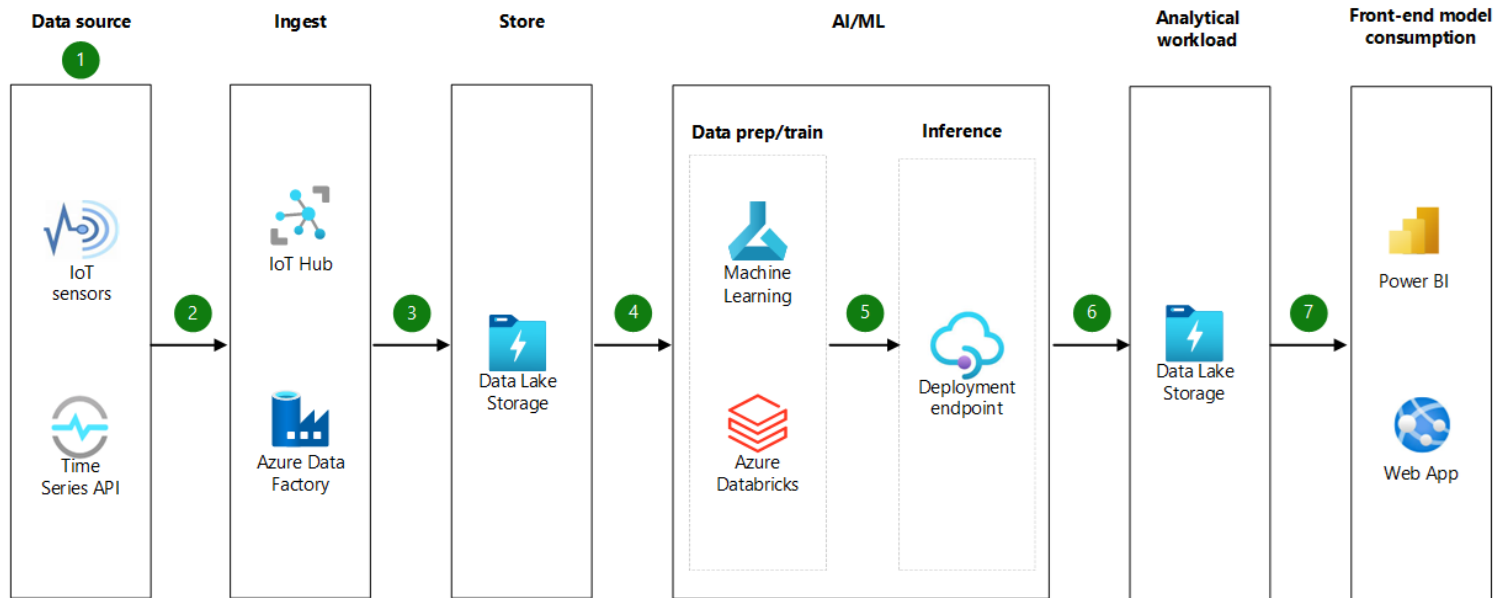


Anomaly Detection Workloads



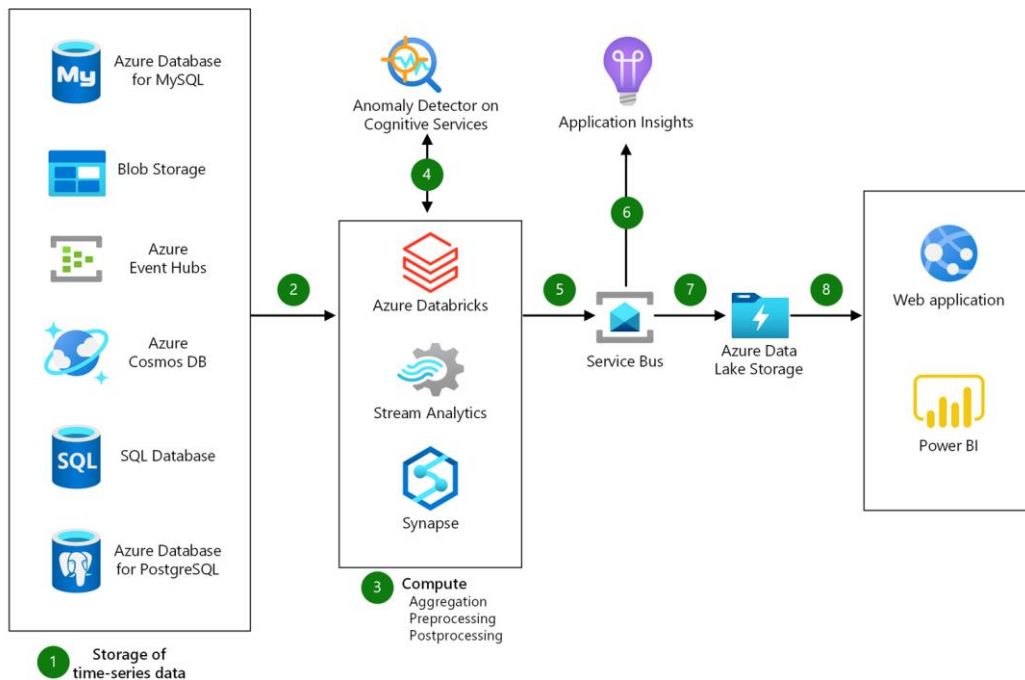


Anomaly Detection Workloads





Anomaly Detection Workloads



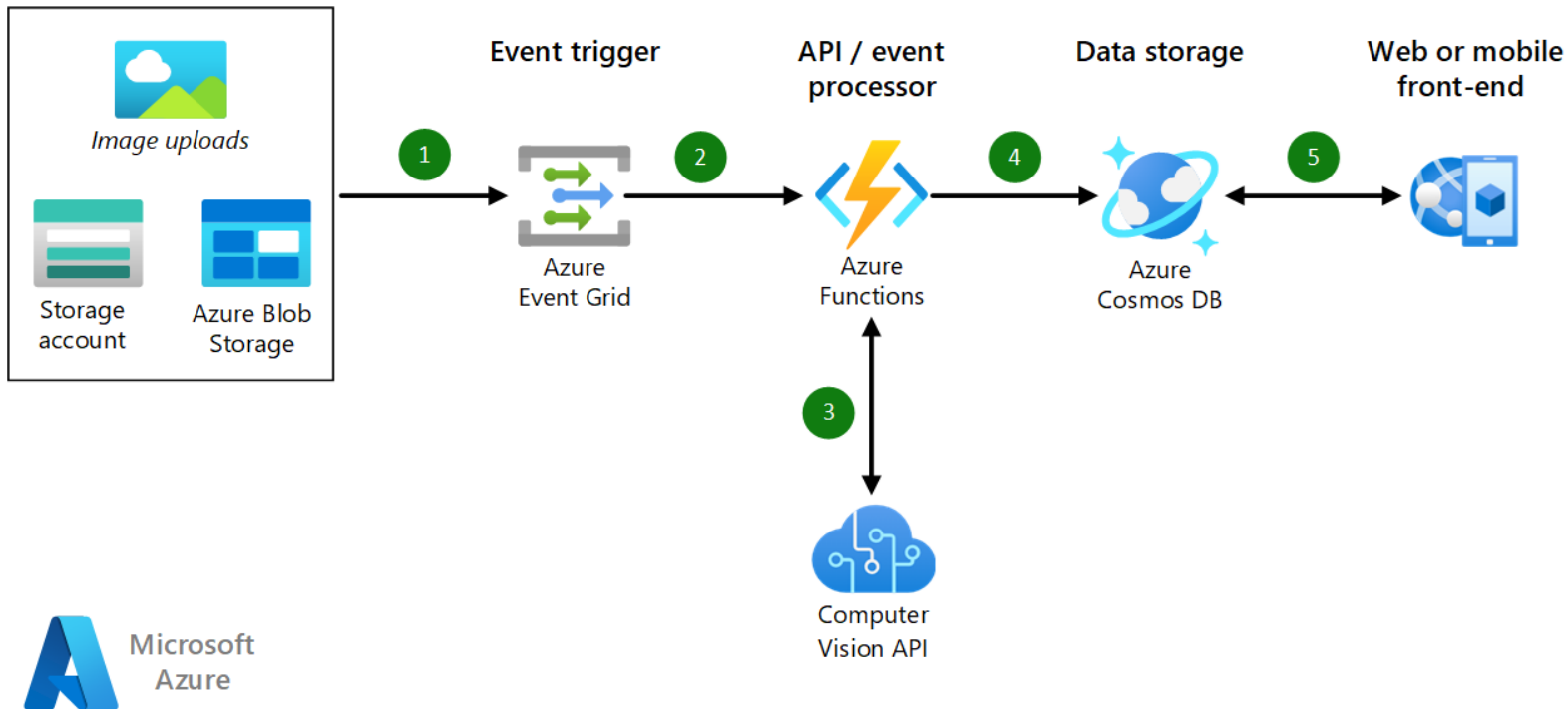


Computer Vision Workloads



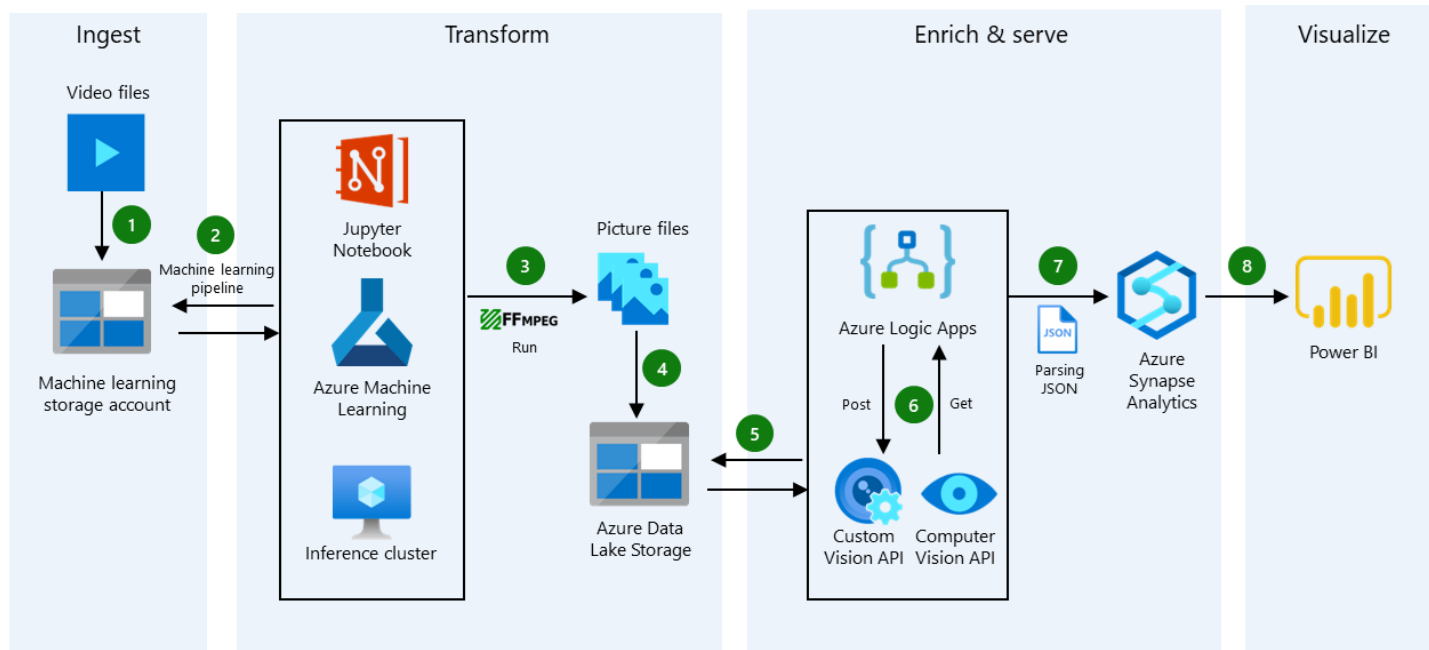


Computer Vision Workloads



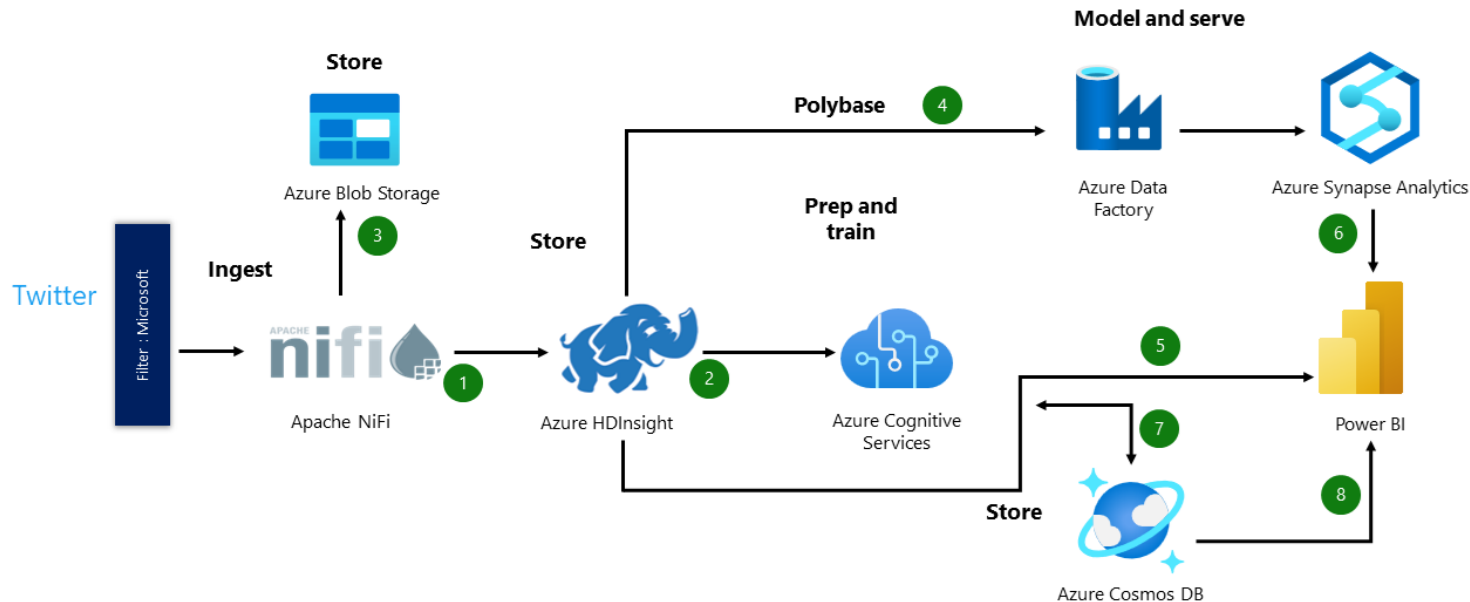


Computer Vision Workloads



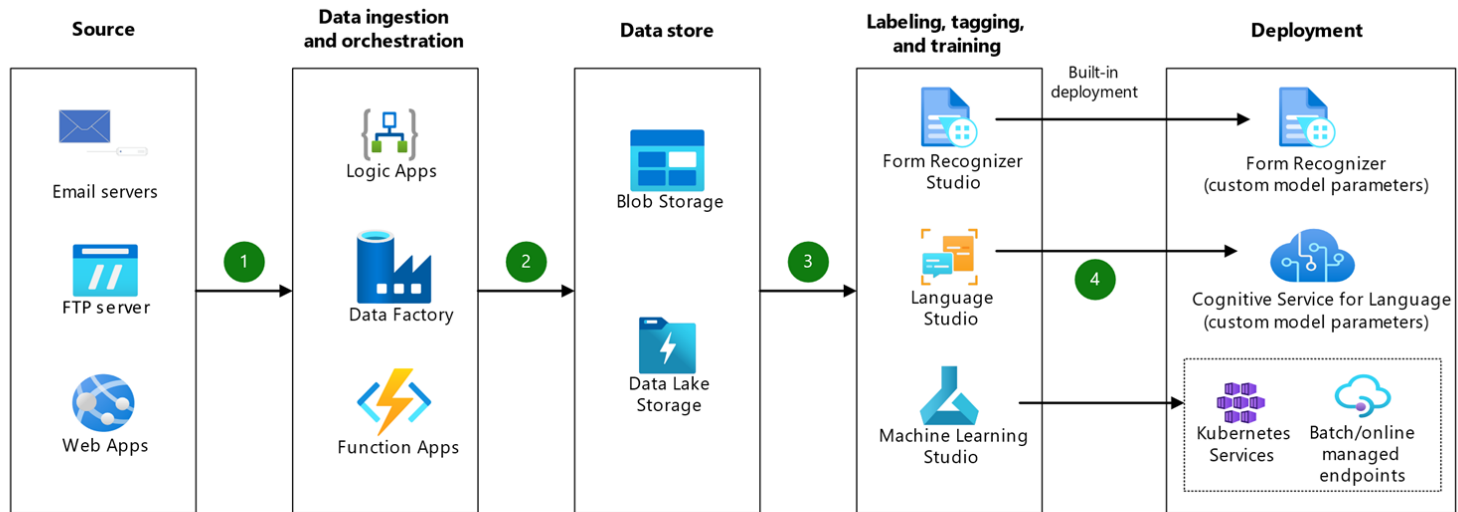


Computer Vision Workloads



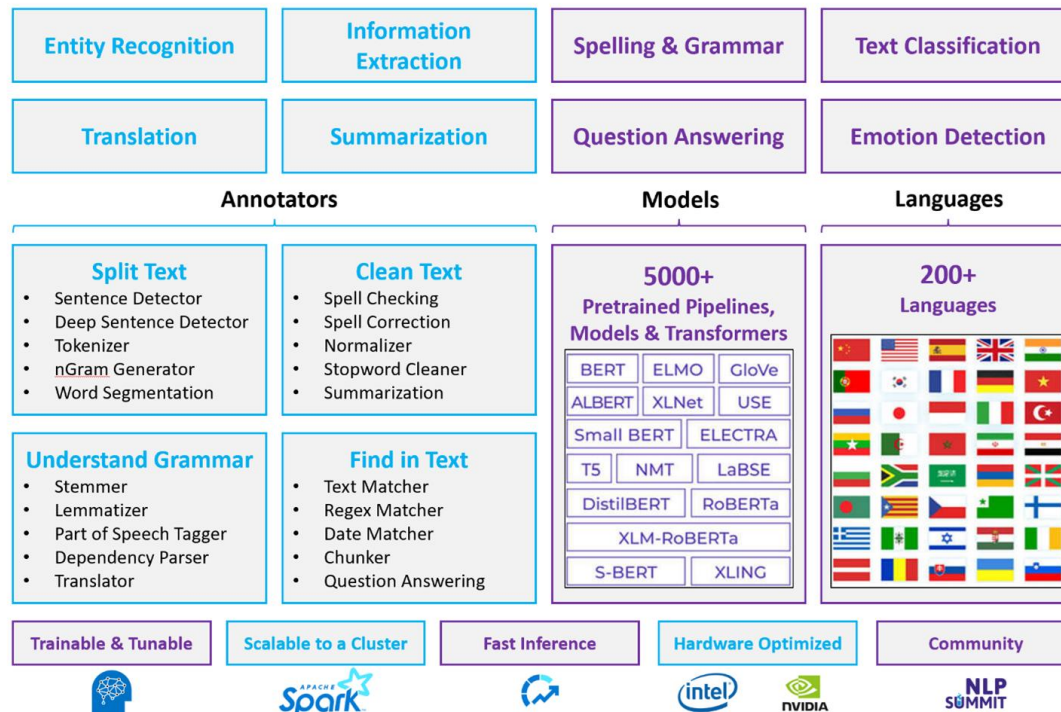


Computer Vision Workloads



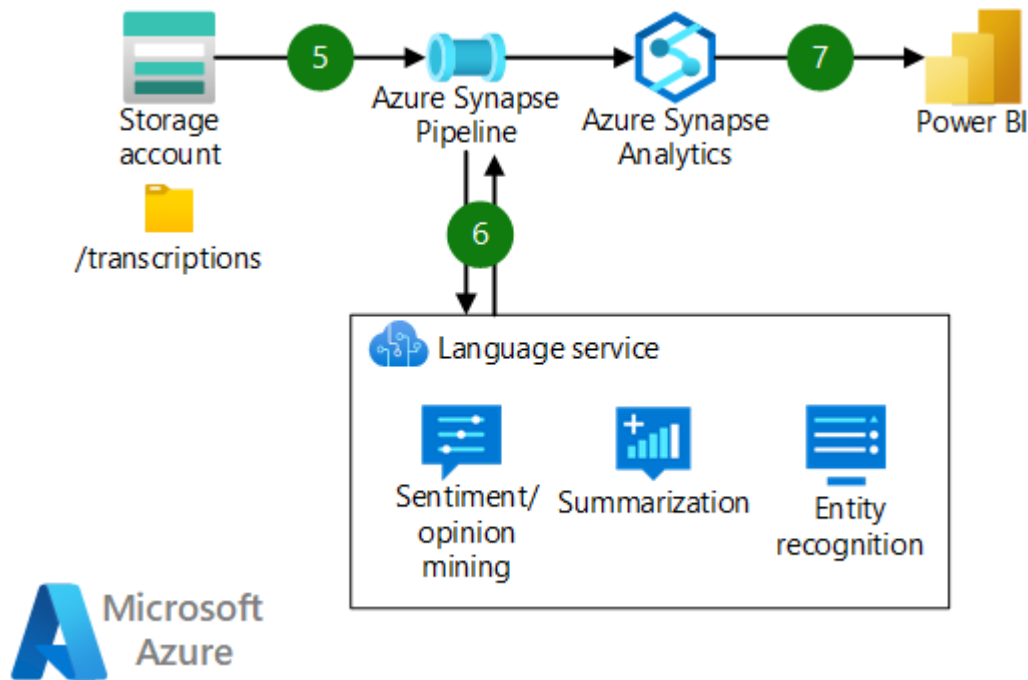


Natural Language Processing Workloads



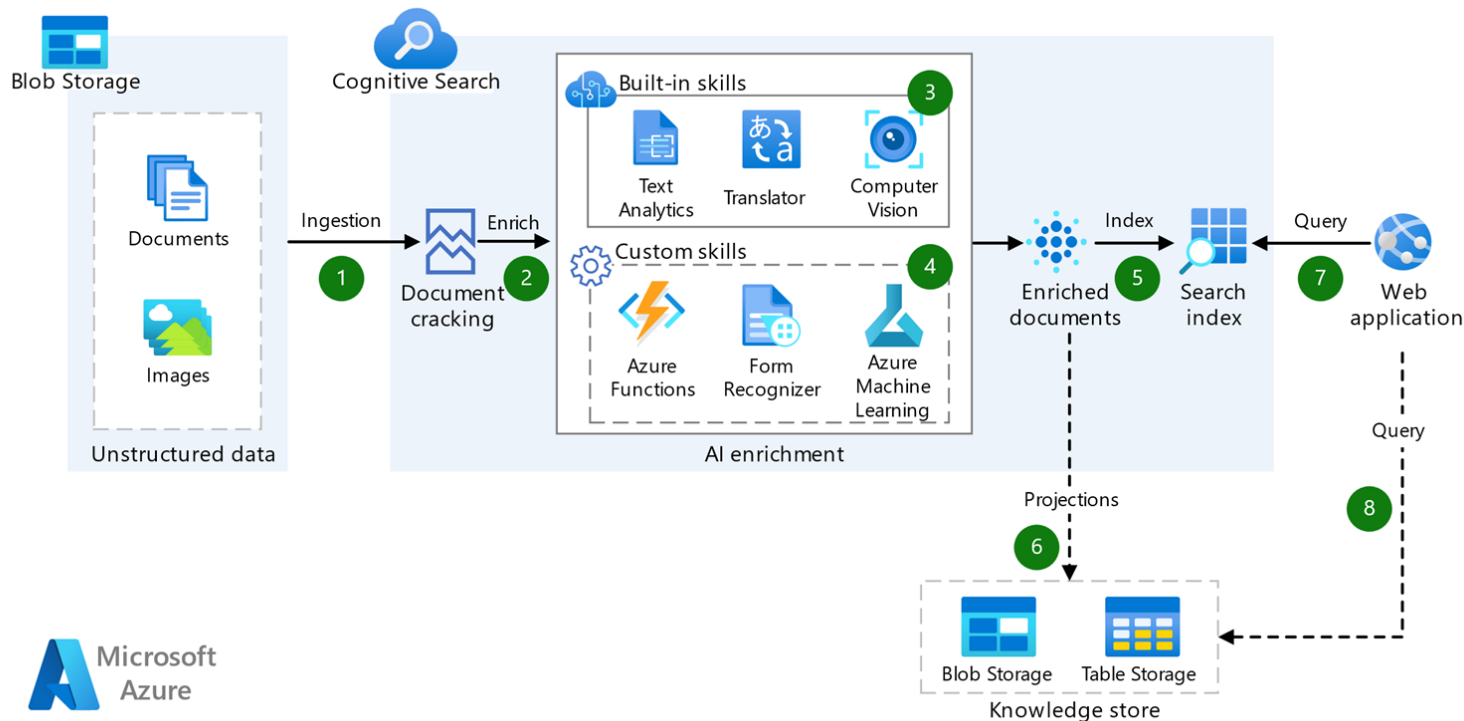


Natural Language Processing Workloads





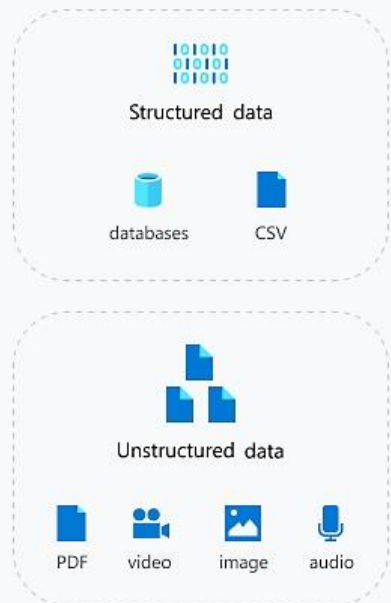
Natural Language Processing Workloads





Knowledge Mining Workloads

INGEST



ENRICH

All models
(Cognitive Services)



Vision



Language



Speech

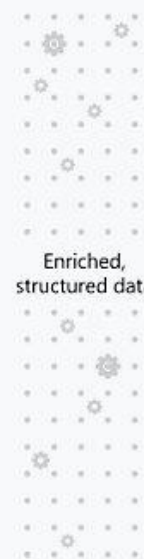


Decision



Search

EXPLORE





Knowledge Mining Workloads



[Azure Cognitive Search](#)

Identify and explore relevant content with the only cloud search service with built-in AI capabilities.



[Azure Cognitive Services](#)

Employ cognition capabilities to expand understanding across content types.



[Azure Machine Learning](#)

Apply machine learning models as custom skills for specific requirements like industry-specific regulations.

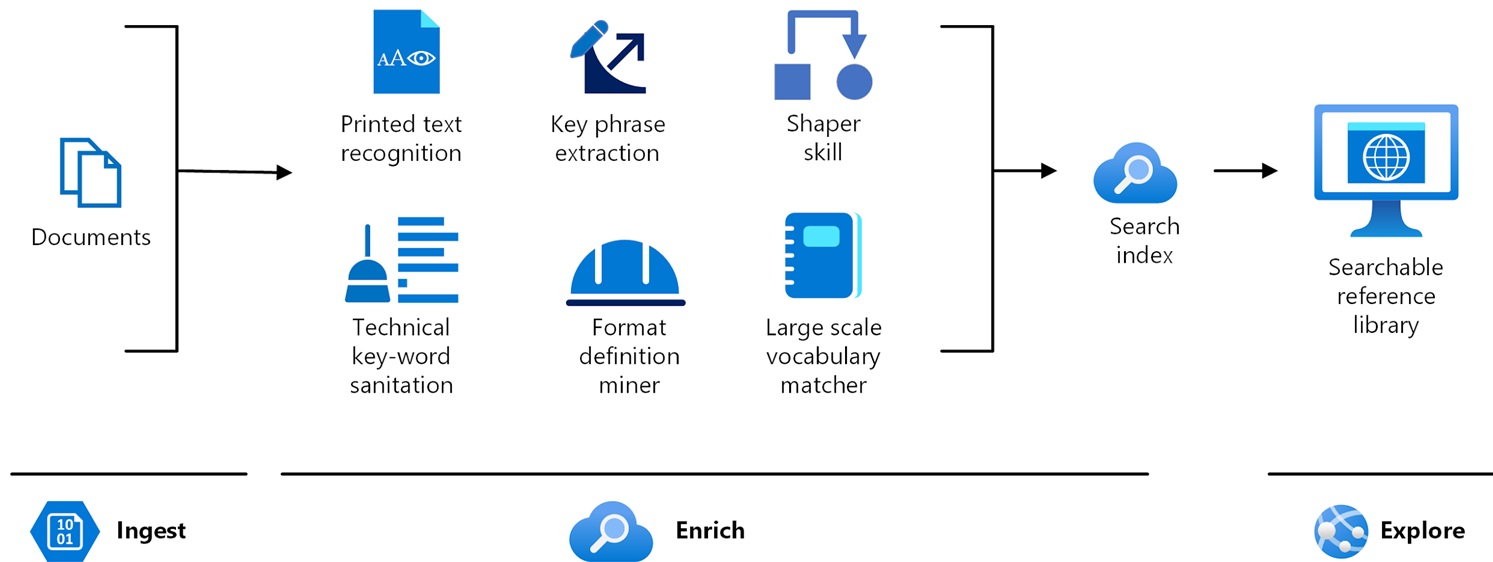


[Azure Bot Services](#)

Design interactive experiences that enable users to extract information from their data via bot interface.

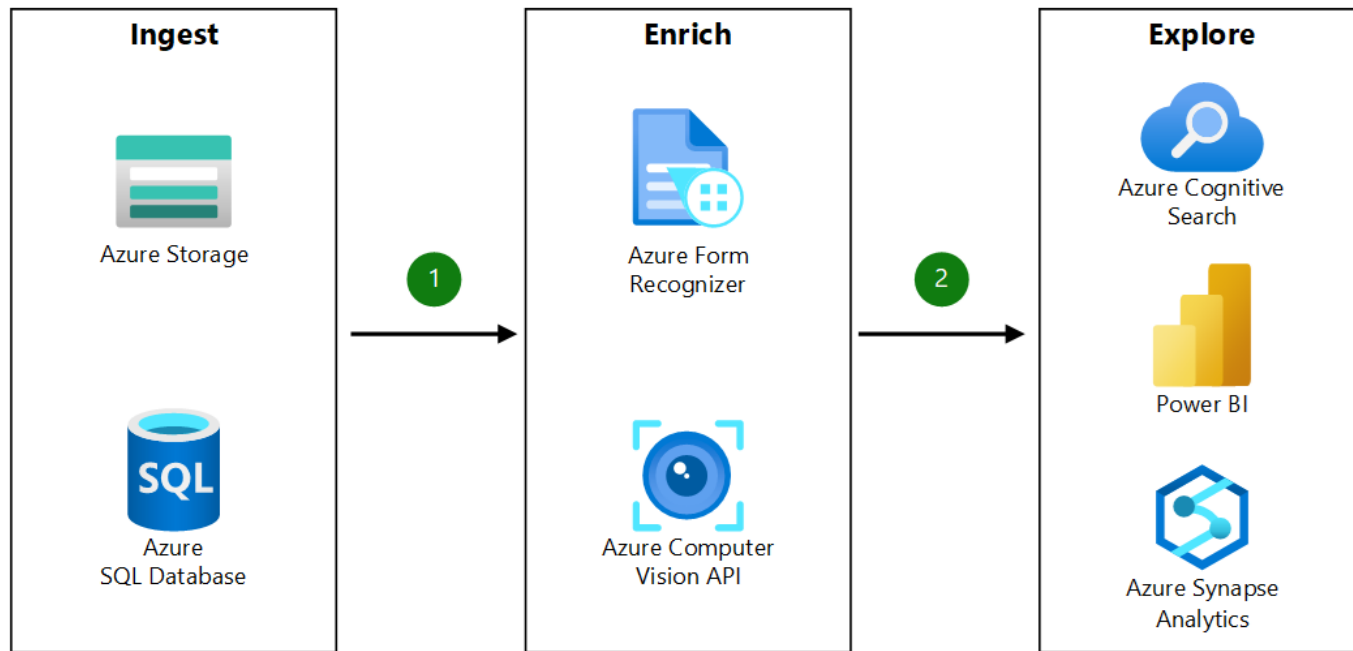


Knowledge Mining Workloads



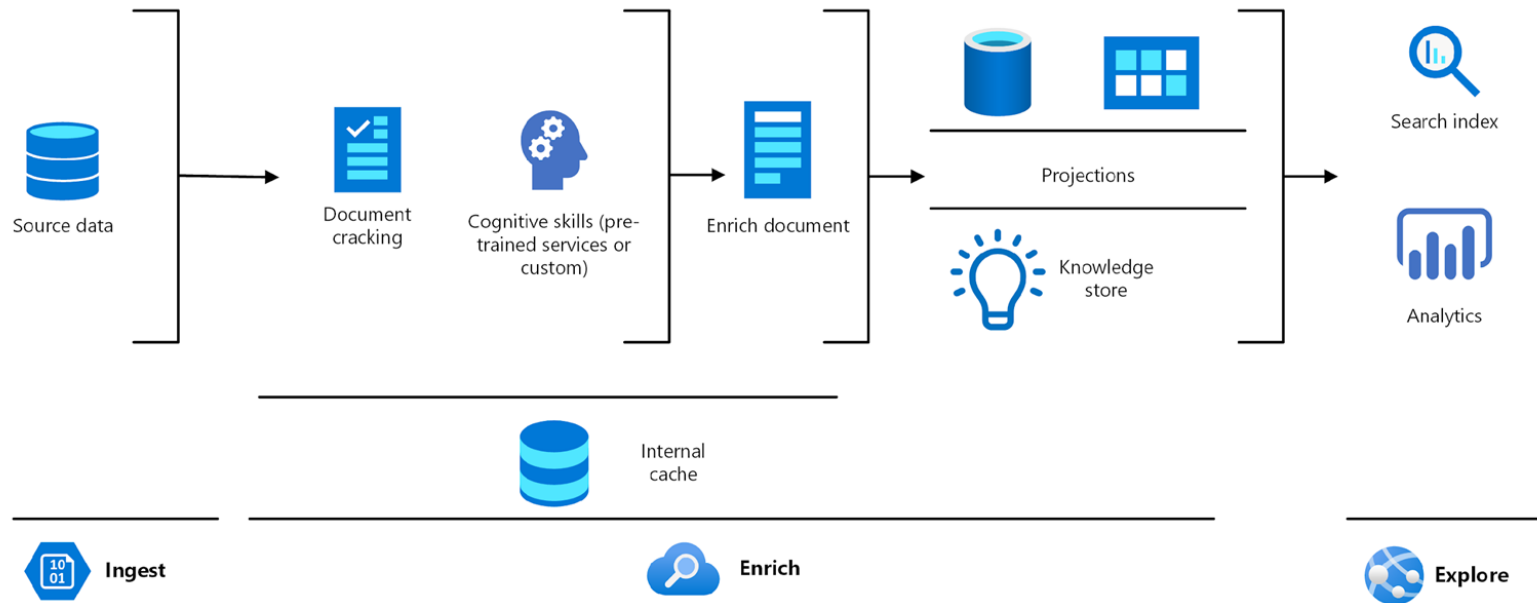


Knowledge Mining Workloads





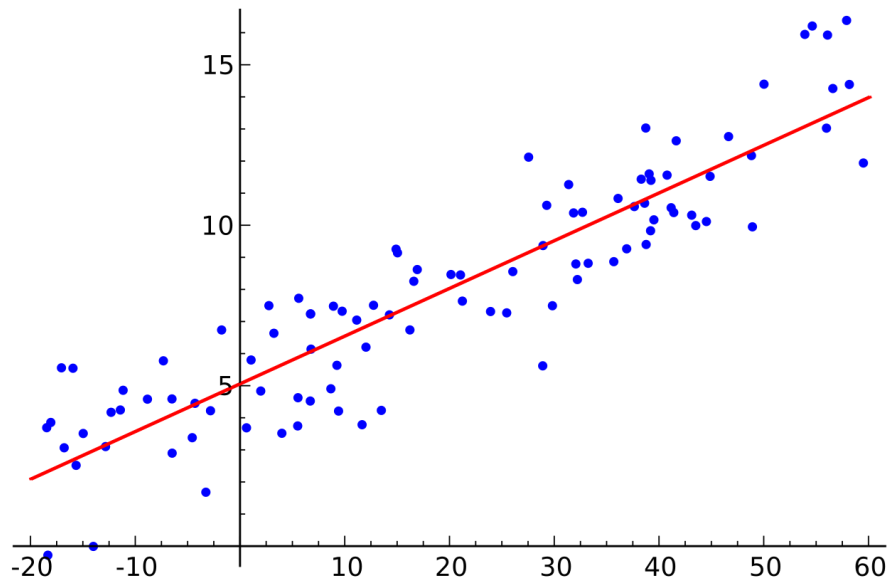
Knowledge Mining Workloads





Regression Machine Learning

- Estimate missing data
- Estimate future data (prediction)





Classification Machine Learning

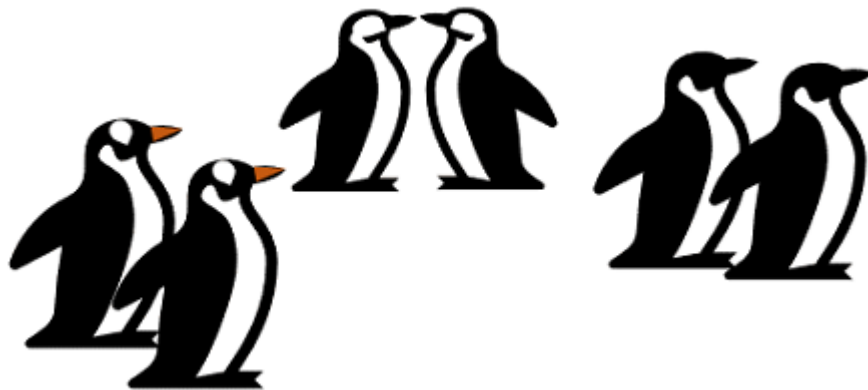
- Group images into categories





Clustering Machine Learning

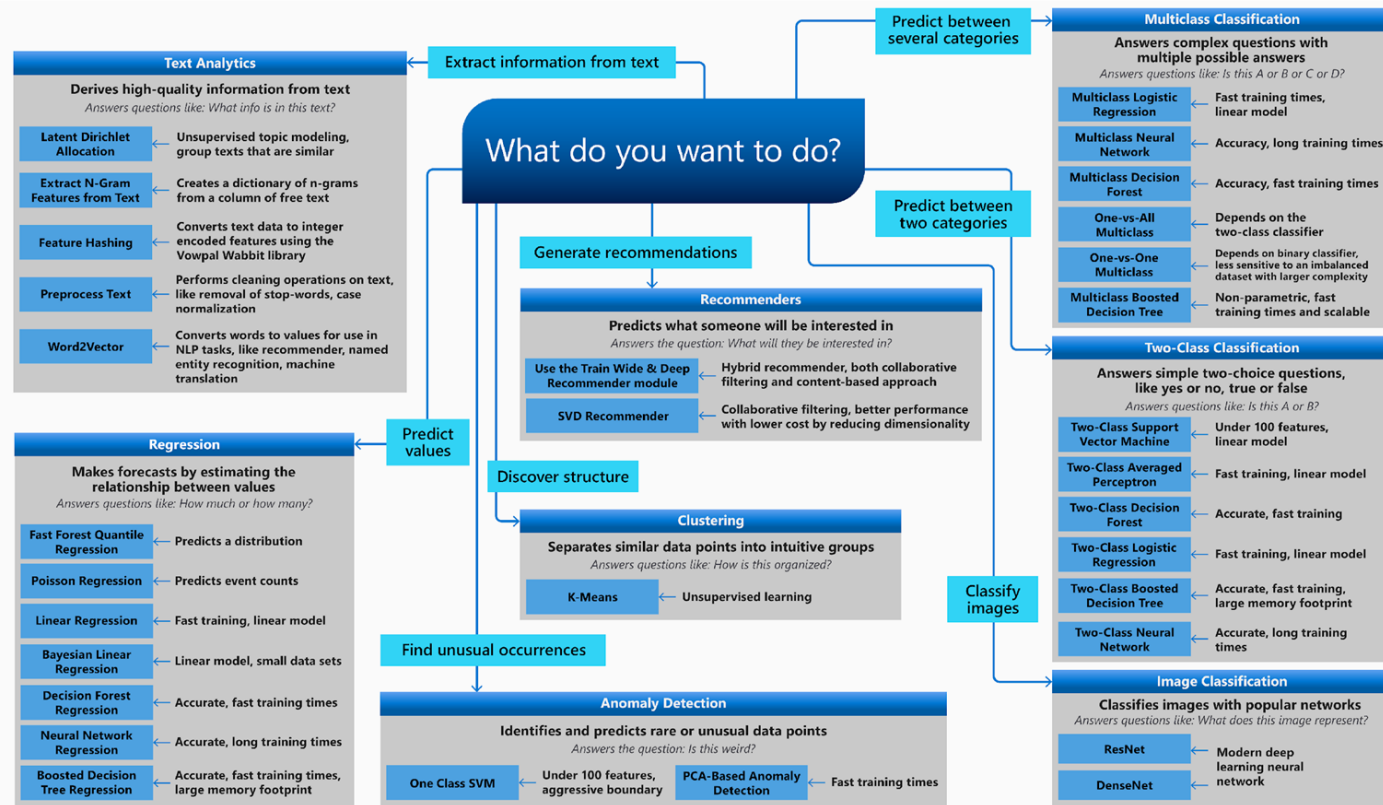
- Grouping unlabeled examples





Machine Learning Algorithm Cheat Sheet

This cheat sheet helps you choose the best machine learning algorithm for your predictive analytics solution. Your decision is driven by both the nature of your data and the goal you want to achieve with your data.





The Exam



AI-900 Exam FAQ

- Number of Questions: between 40 and 60
- Duration: 120 minutes
- Questions
 - See the [exam sandbox](#)
- There are no hands-on labs
- Pass Score: 700 (on a scale of 1-1000)



AI-900

- [Exam AI-900](#)
- [Skills measured](#)
- [Exam Sandbox](#)



Schedule exam

Exam AI-900: Microsoft Azure AI Fundamentals

United States



Languages: English, Japanese, Chinese (Simplified), Korean, German, French, Spanish, Portuguese (Brazil), Russian, Indonesian (Indonesia), Arabic (Saudi Arabia), Chinese (Traditional), Italian

Retirement date: none

Prove that you can describe the following: AI workloads and considerations; fundamental principles of machine learning on Azure; features of computer vision workloads on Azure; and features of Natural Language Processing (NLP) workloads on Azure.

\$99 USD*

Price based on the country or region in which the exam is proctored.

Schedule with Pearson VUE >

For students or instructors

Schedule with Certiport >

Take a free practice assessment

Test your skills with practice questions to help you prepare for the exam. [Learn more about practice assessments.](#)

⊕ Add



Select exam options

AZ-104: Microsoft Azure Administrator

Where do you want to take your exam?



At a test center



Online at my home or office

I have a Private Access Code



Where do you want to take your exam?



At a test center



Online at my home or office

I have a Private Access Code

Prepare for your online exam at your home or office



Your computer

Use a personal computer that has a reliable webcam and internet connection.

Run [system test](#).



Your testing space

The room should be a distraction-free, private place.

See [acceptable spaces](#) and view permitted [comfort aid list](#).



Your photo ID

We'll verify your government-issued identification (ID) when you arrive for your exam.

Review [admission & ID policies](#)



What to expect

Check in for your OnVUE exam 30 minutes before your appointment time.

Watch our [short video](#) to get familiar with the process.

Questions?

Check out the [OnVUE FAQs](#) and [minimum technical requirements](#).



Cart

[Review and confirm](#) contact information to avoid issues on test day.

Description	Details	Price	Actions
		165.00	Remove

Available Products

In addition to scheduling your exam, you might be interested in the following products.



Microsoft Official Practice Test powered by MeasureUp - 30 day online access
Get a discount on available Microsoft Official Practice Test for Microsoft certification exams (Fundamentals, Role-based, or Specialty) 30-day online access.

Special offer: Regularly priced at USD 99.00! [Click here for details](#)

[More Details](#)

USD 80.00

[Add to Order](#)



It's time to test your system

Order #: 0064-8802-7606

Your appointment is confirmed! An order confirmation containing important exam day information has been sent to: zaalion@gmail.com

What's next?

Run a system test

We need to verify that the computer and internet connection you plan to use on exam day meet the [minimum requirements](#) for online testing. It'll just take 5 minutes to run:



Equipment and internet connection checks



Exam simulation

Description	Details	Order Information	Price
			165.00



System Test

☐ I confirm that on my exam day I will be using this same testing space, computer, and internet connection.

Alert! Work computers generally have more restrictions that may prevent a successful test. Ensure you are not behind a corporate firewall, and shut down any **Virtual Private Networks (VPNs)** or **Virtual Machines**.

1. Copy Access Code

Click '**Copy Access Code**'.

This code will authorize you to perform a system test.

690-635-235

Copy Access Code

2. Download OnVUE

Click '**Download**'.

Download

3. Run OnVUE

Run the OnVUE application from your Downloads folder.



Course Repository

<https://github.com/zaalion/oreilly-ai-900>

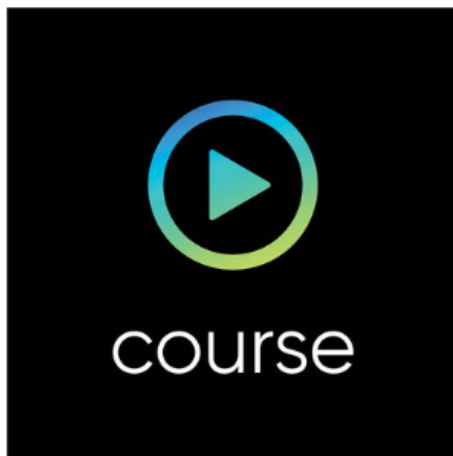


COURSE

Microsoft Azure Fundamentals (AZ-900) Certification Course

★★★★★ [1 review](#)

By [Reza Salehi](#)



Continue

TIME TO COMPLETE:
4h 37m

LEVEL:
Beginner

TOPICS:
[Microsoft Azure](#)

PUBLISHED BY:
[O'Reilly Media, Inc.](#)

PUBLICATION DATE:
October 2022

Preparing for certification?

[Take Practice Exam](#) >

<https://learning.oreilly.com/videos/microsoft-azure-fundamentals/0636920797234/>

Azure Cookbook

<https://learning.oreilly.com/library/view/azure-cookbook/9781098135782/>

<https://www.amazon.ca/Azure-Cookbook-Recipes-Maintain-Solutions/dp/1098135792/>

<https://www.amazon.com/Azure-Cookbook-Recipes-Maintain-Solutions/dp/1098135792>

O'REILLY®

Azure Cookbook

Recipes to Create and Maintain Cloud Solutions
in Azure



Reza Salehi



Thank you!

Reza Salehi

@zaalion