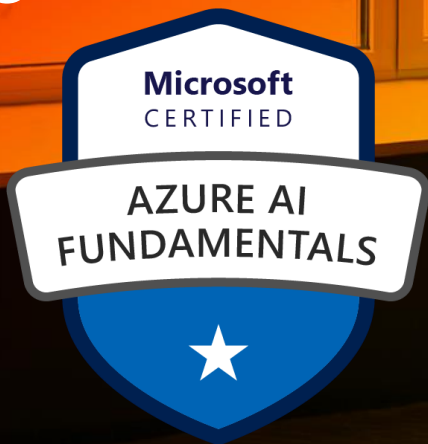


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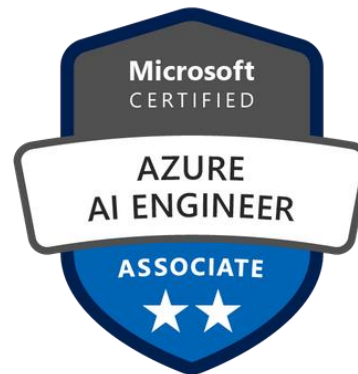


# Reza Salehi

Cloud Consultant and Trainer



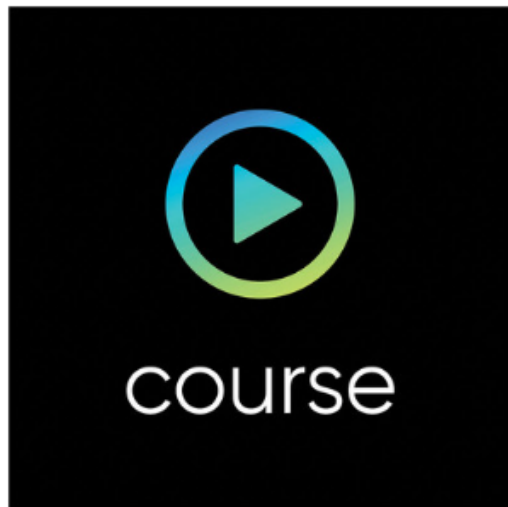
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TIME TO COMPLETE:  
4h 37m

LEVEL:  
Beginner

TOPICS:  
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PUBLICATION DATE:  
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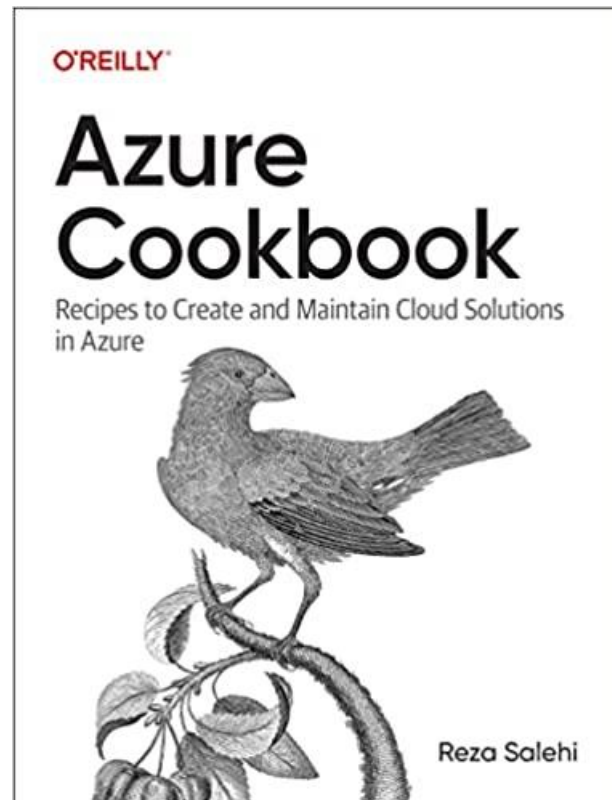


# Azure Cookbook

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# Course Overview





# AI-900 Crash Course

- Describe Artificial Intelligence workloads and considerations (20–25%)
- Describe fundamental principles of machine learning on Azure (25–30%)
- Describe features of computer vision workloads on Azure (15–20%)
- Describe features of Natural Language Processing (NLP) workloads on Azure (25–30%)





# Course Repository

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





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Use Git or checkout with SVN using the web URL.

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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



### ① Important

The English language version of this exam was updated on May 4, 2023. Review the study guide linked in the “Tip” box for details about the latest 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](#)

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

**Related exams:** none

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## 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

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#### 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 (20–25%)





# **Describe Artificial Intelligence workloads and considerations (20–25%)**

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



# 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](#)]





# Identify Features of Common AI Workloads

- Identify features of anomaly detection workloads [see [1](#) [2](#) [3](#) [4](#) [5](#)]
- 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](#)]



# Describe Fundamental Principles of Machine Learning on Azure (25– 30%)





# **Describe Fundamental Principles of Machine Learning on Azure (25–30%)**

- Identify common machine learning types
- Describe core machine learning concepts
- Describe capabilities of visual tools in Azure Machine Learning Studio



# Identify Common Machine Learning Types

- 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](#)]



# 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 Capabilities of Visual Tools in Azure Machine Learning Studio

- Automated machine learning [see [1](#) [2](#)]
- Azure Machine Learning designer [see [1](#) [2](#)]



# 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

- Identify capabilities of the Computer Vision service [see [1](#) [2](#)]
- Identify capabilities of the Custom Vision service [see [1](#) [2](#) [3](#)]
- Identify capabilities of the Face service [see [1](#) [2](#)]
- Identify capabilities of the Form Recognizer service [see [1](#) [2](#)]



# Describe Features of Natural Language Processing (NLP) Workloads on Azure (25–30%)





# **Describe Features of Natural Language Processing (NLP) Workloads on Azure (25–30%)**

- Identify features of common NLP workload scenarios
- Identify Azure tools and services for NLP workloads
- Identify considerations for conversational AI solutions on Azure



# 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

- Identify capabilities of the Language service [see [1](#)]
- Identify capabilities of the Speech service [see [1](#)]
- Identify capabilities of the Translator service [see [1](#)]





# Identify Considerations for Conversational AI Solutions on Azure

- Identify features and uses for bots [see [1](#) [2](#) [3](#)]
- Identify capabilities of the Power Virtual Agents and Azure Bot service [see [1](#) [2](#)]

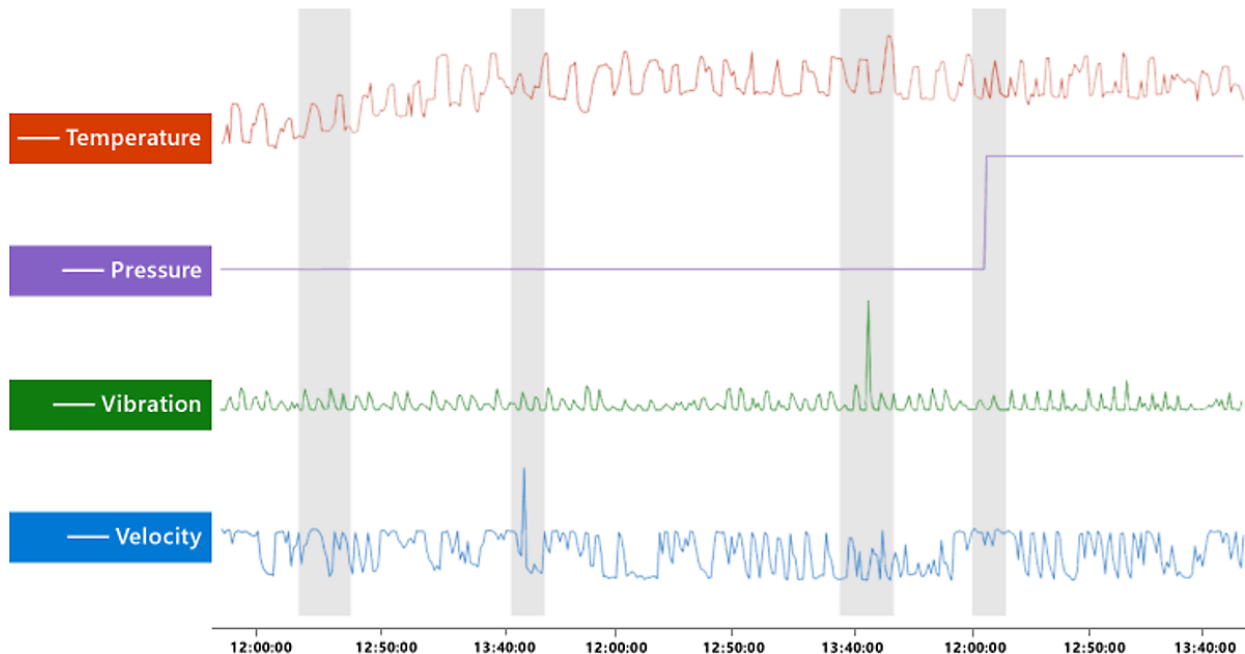


# AI Workloads



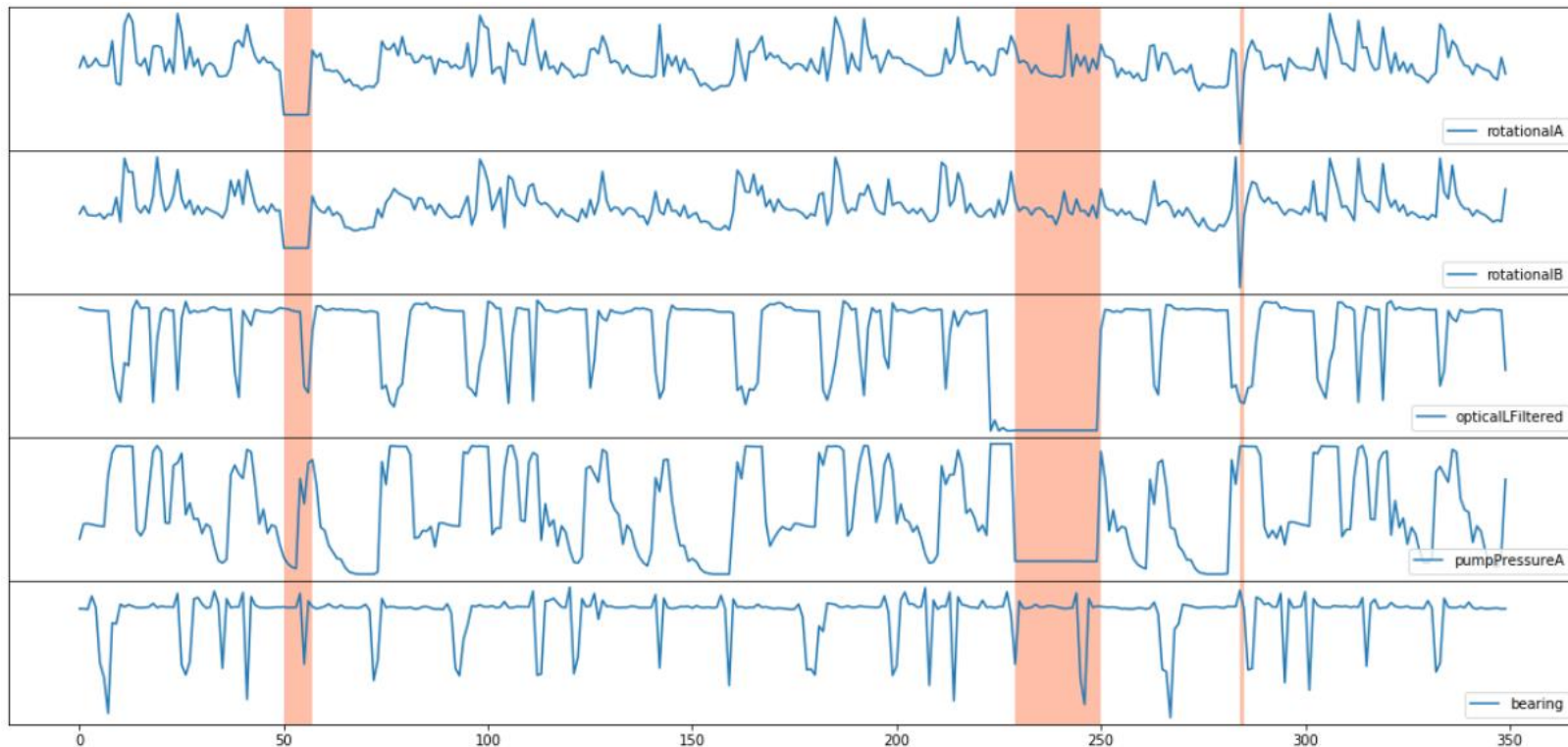


# Anomaly Detection Workloads



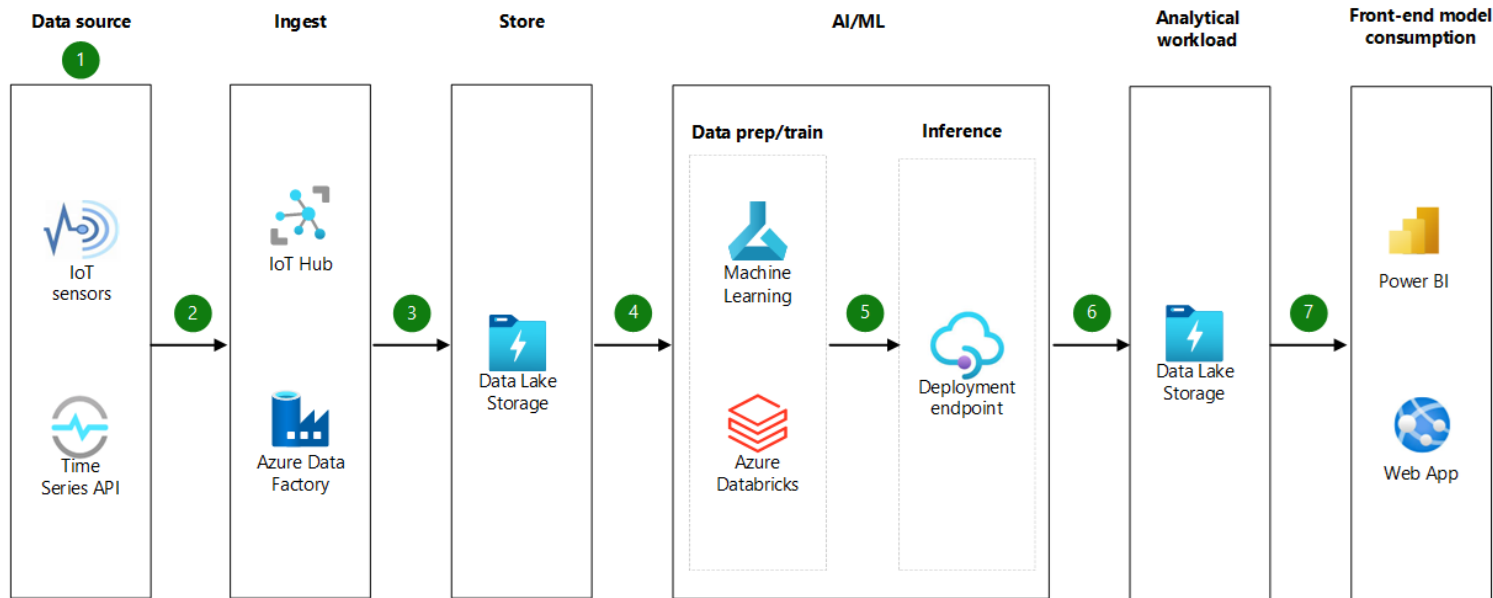


# Anomaly Detection Workloads



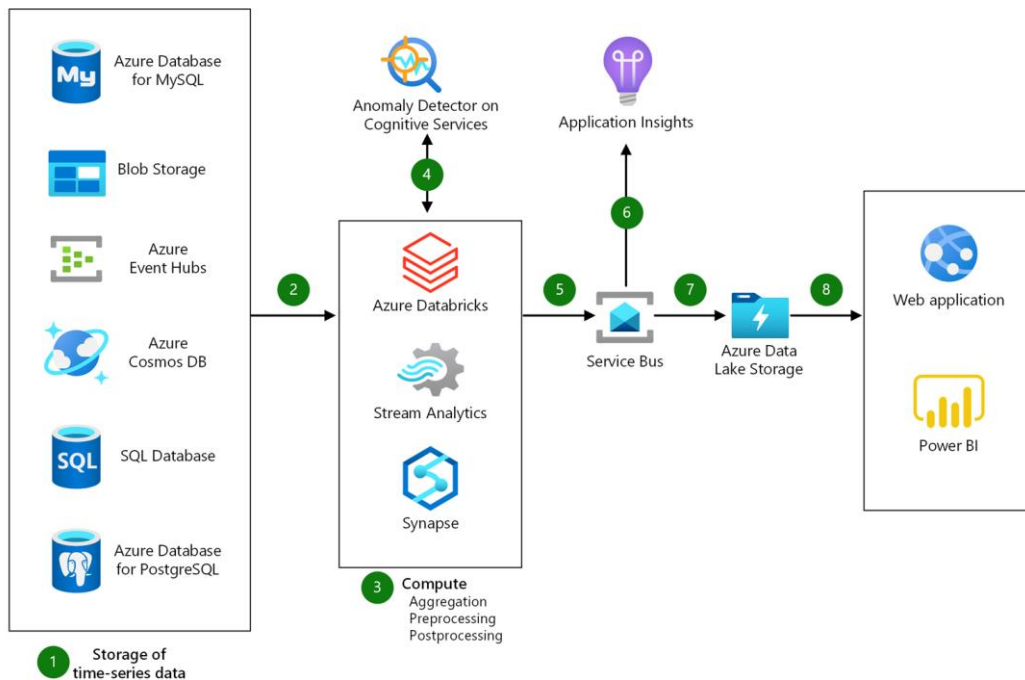


# Anomaly Detection Workloads





# Anomaly Detection Workloads





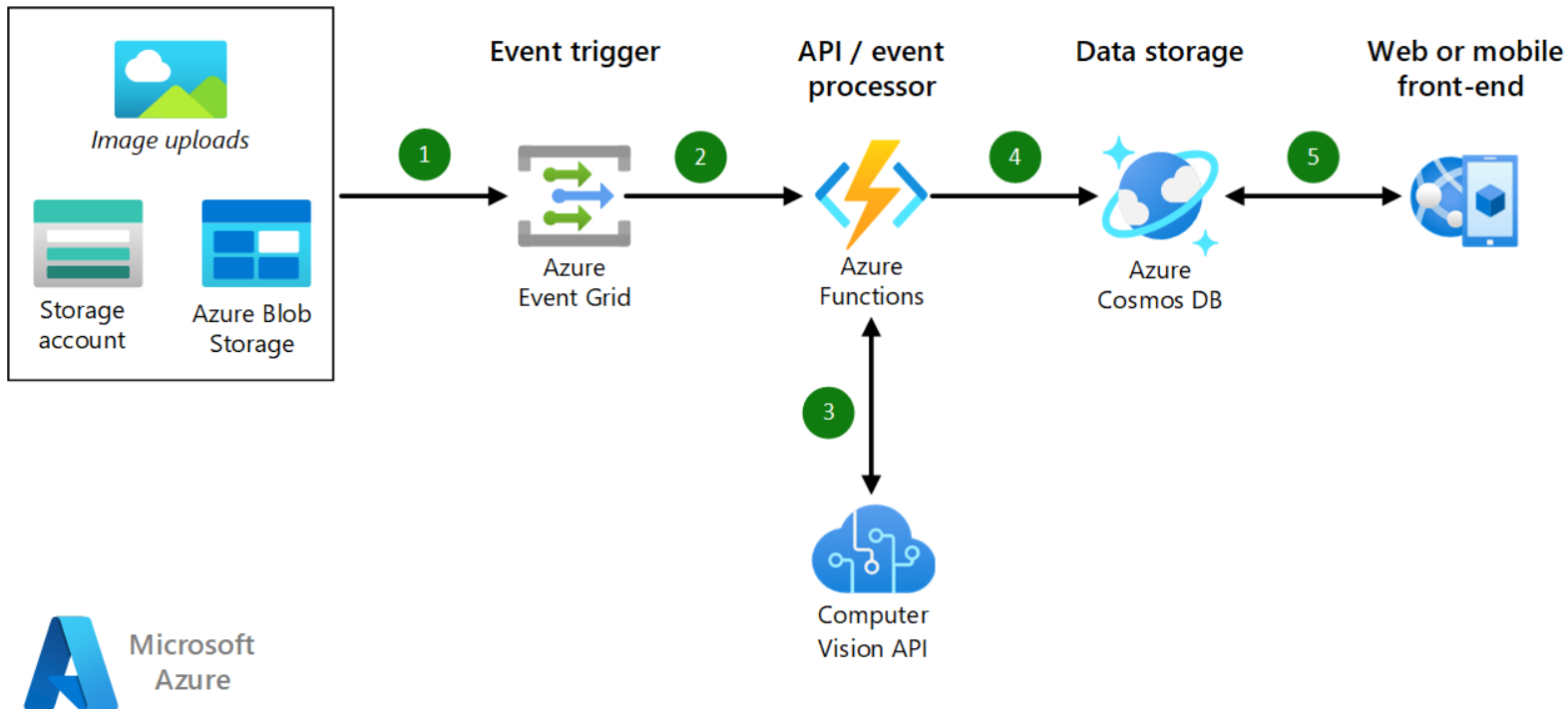
# Computer Vision Workloads





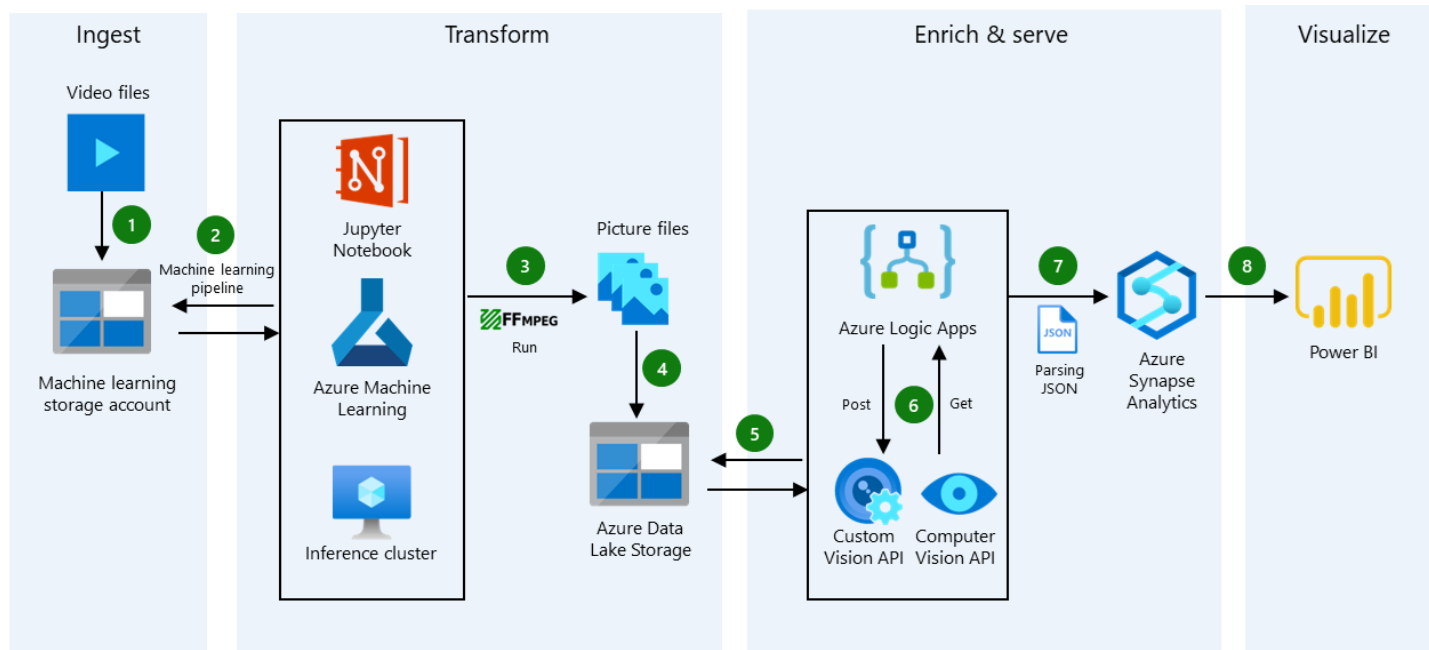


# Computer Vision Workloads



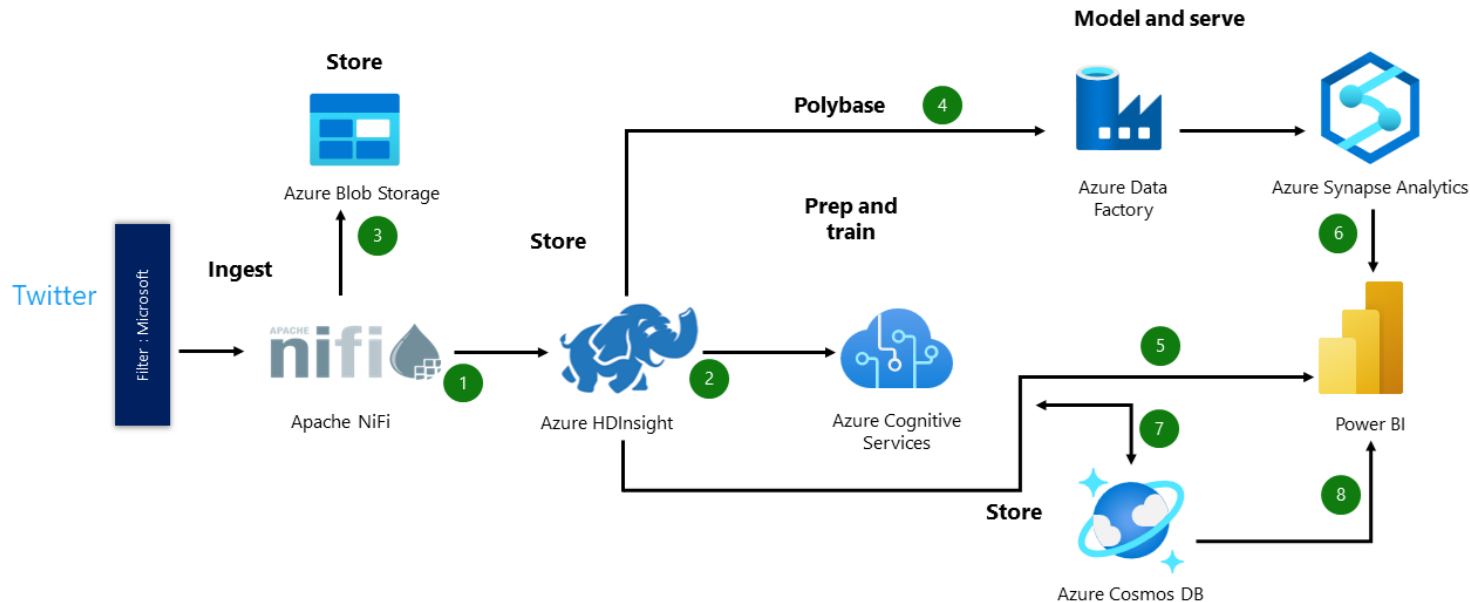


# Computer Vision Workloads



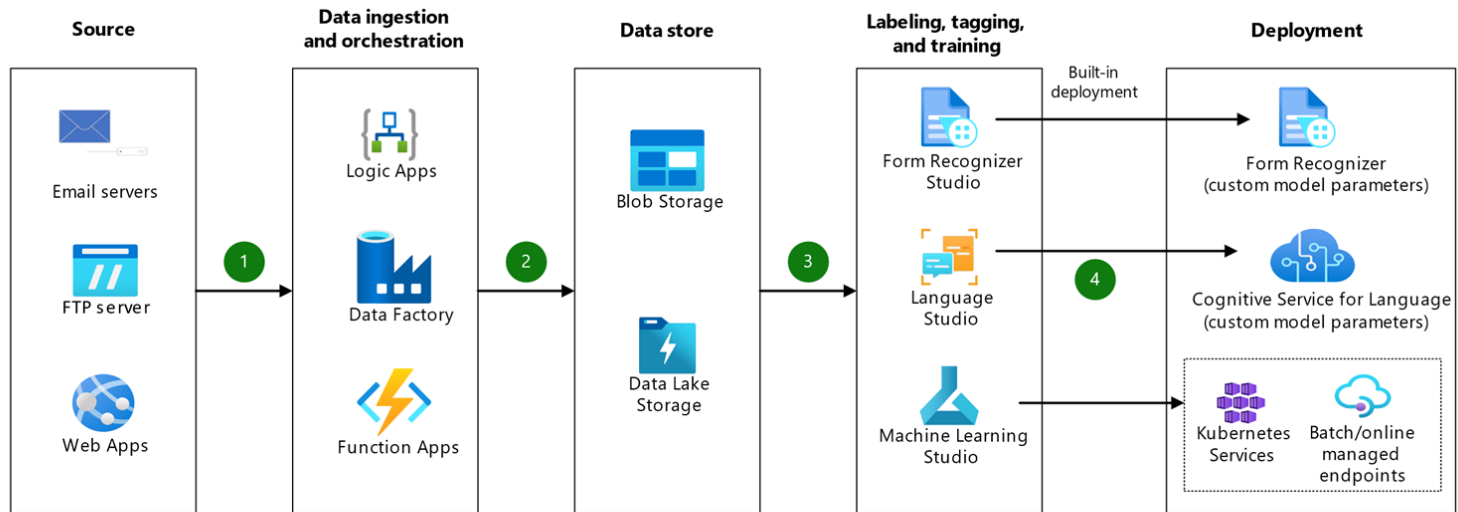


# Computer Vision Workloads



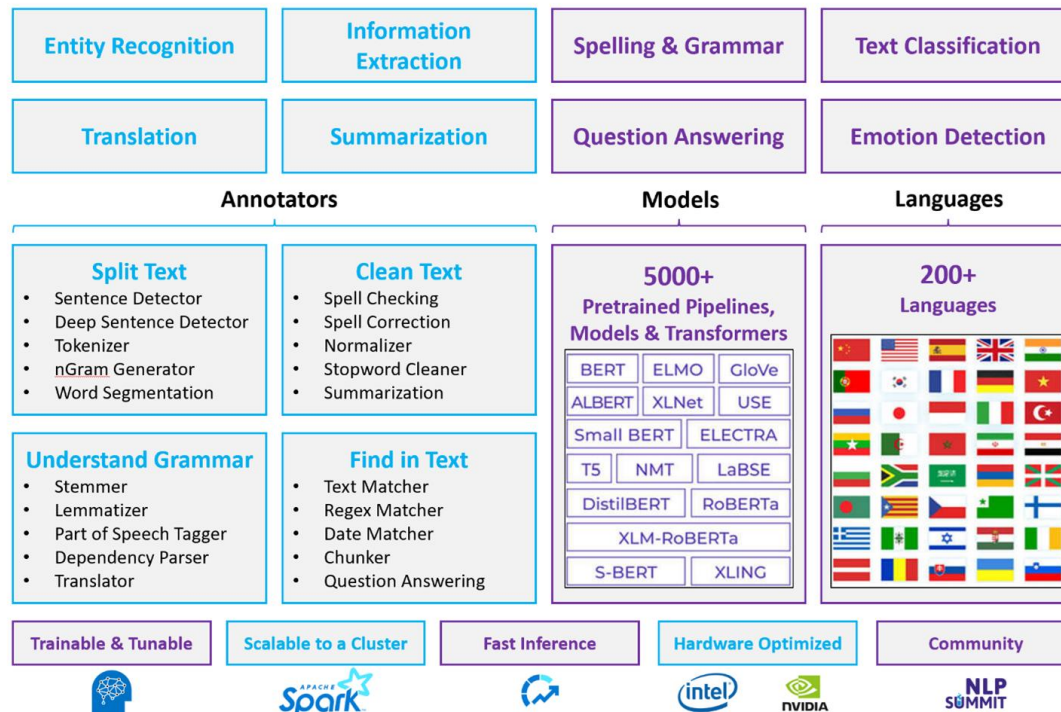


# Computer Vision Workloads



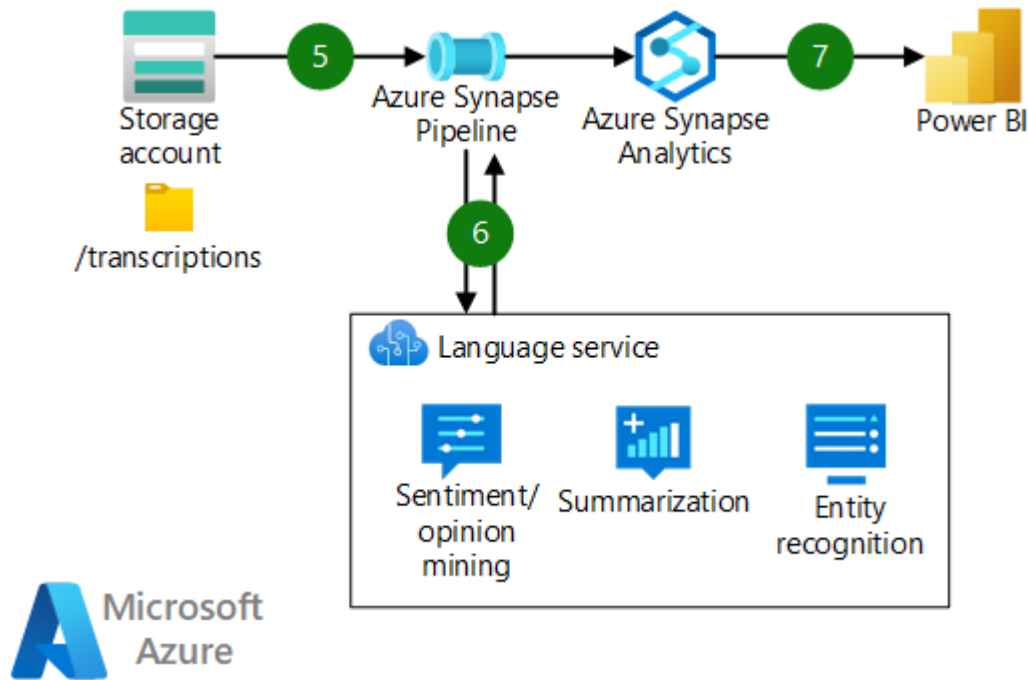


# Natural Language Processing Workloads



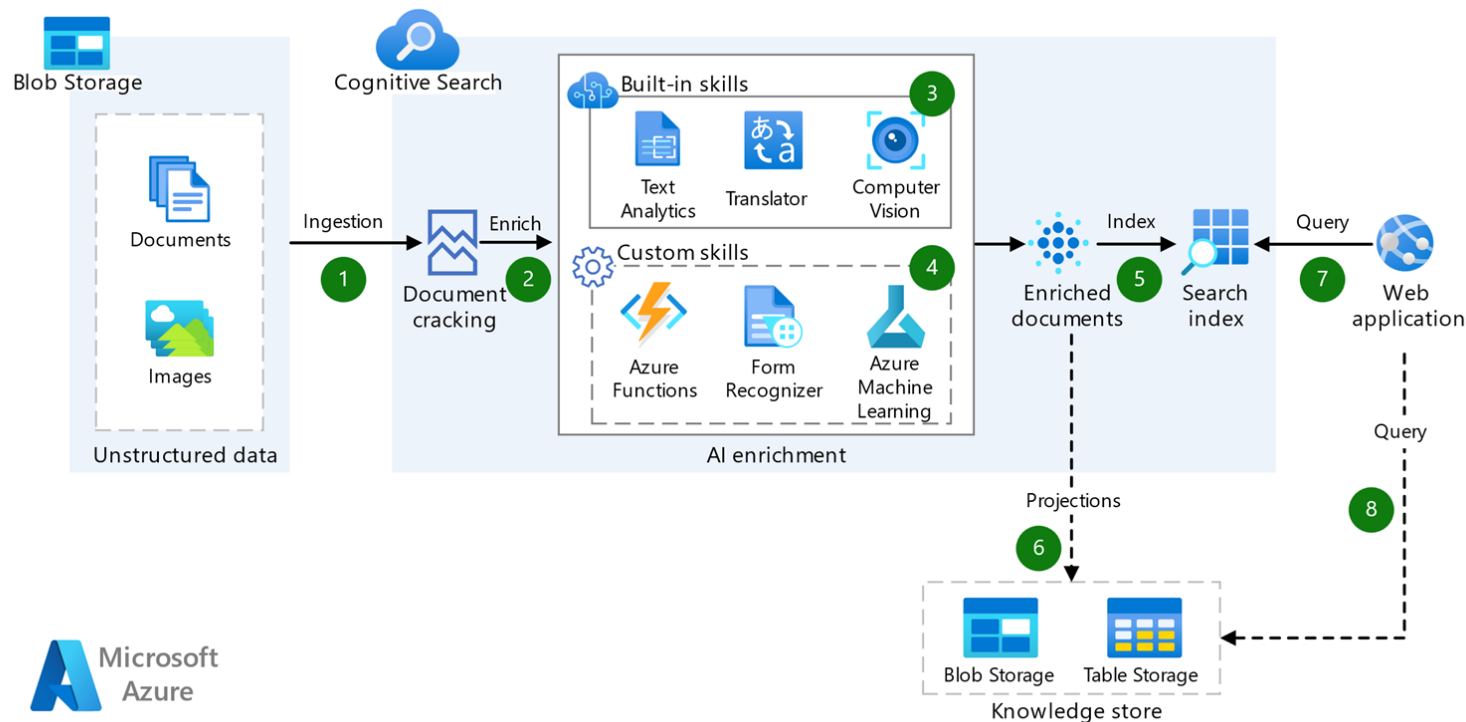


# Natural Language Processing Workloads





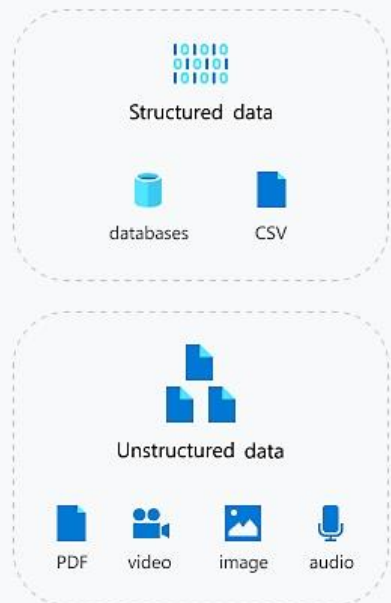
# Natural Language Processing Workloads





# Knowledge Mining Workloads

## INGEST



## ENRICH

All models  
(Cognitive Services)



Vision



Language



Speech

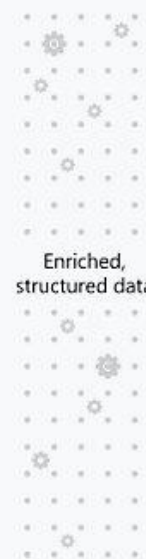


Decision



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.

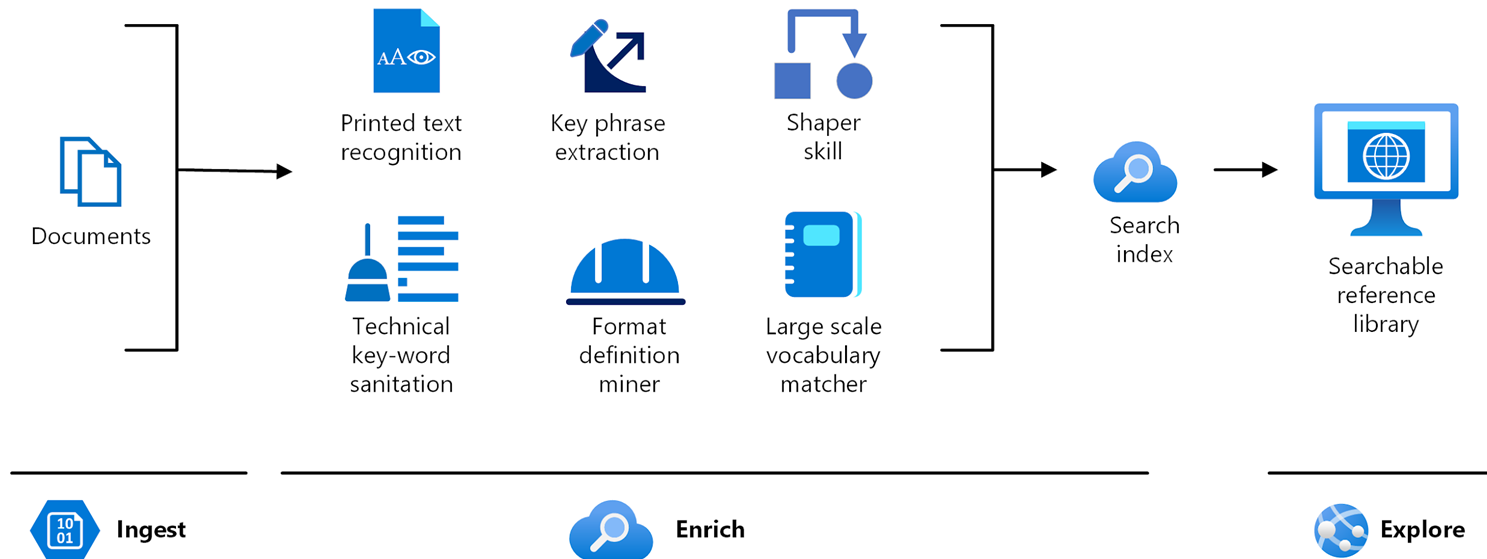


## [Azure Bot Services](#)

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

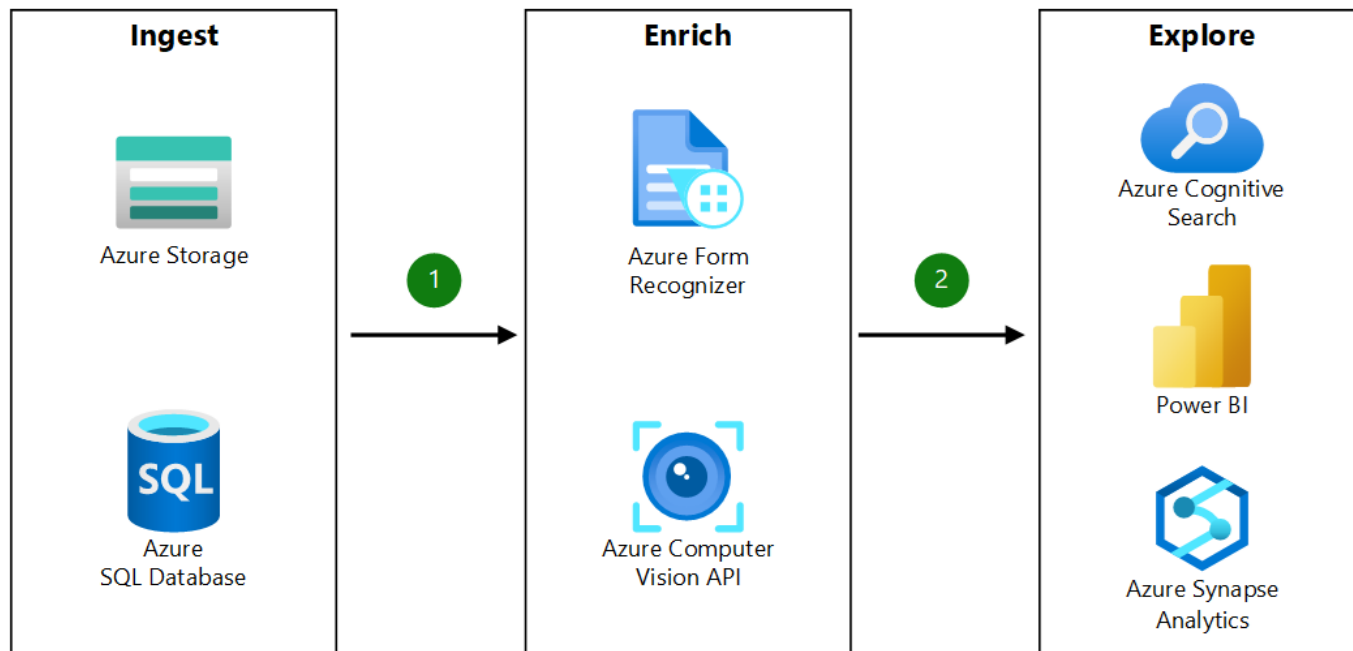


# Knowledge Mining Workloads



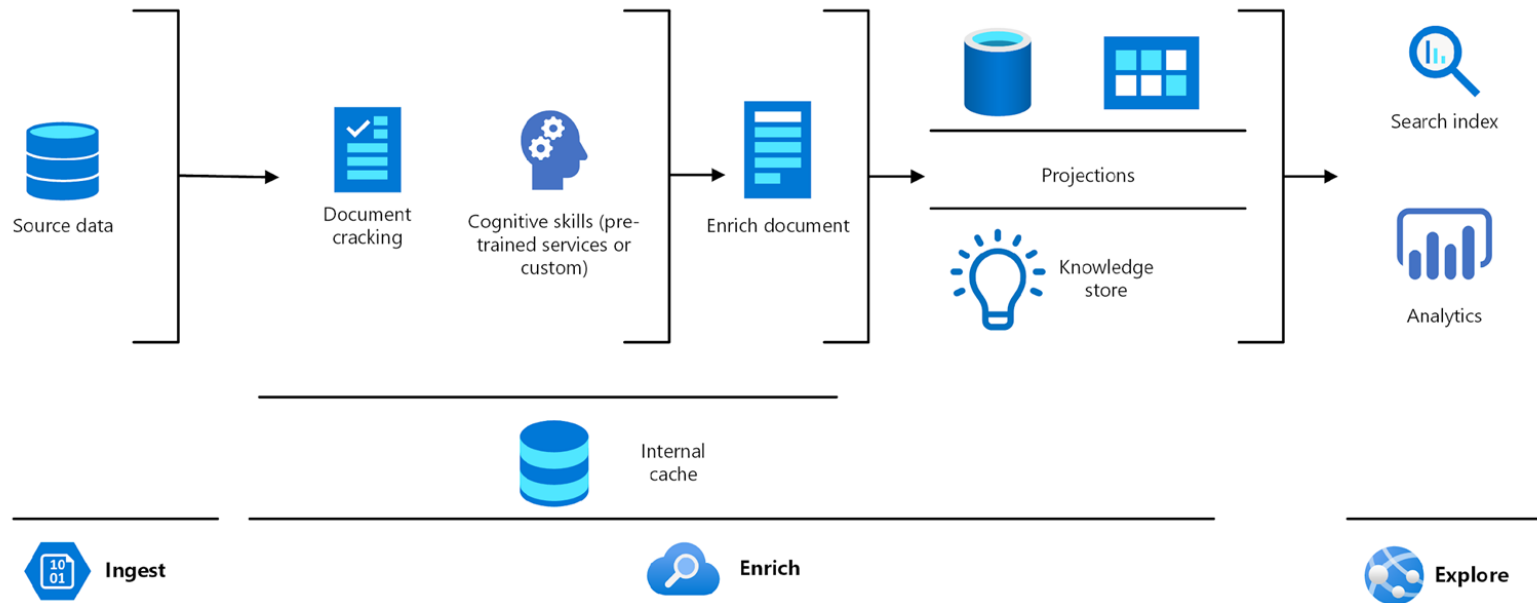


# Knowledge Mining Workloads





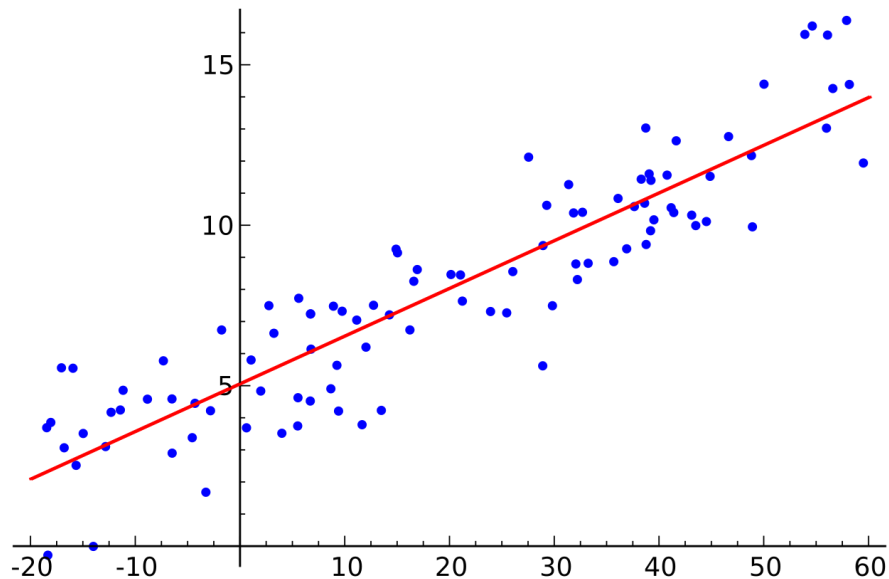
# Knowledge Mining Workloads





# Regression Machine Learning

- Estimate missing data
- Estimate future data (prediction)





# Classification Machine Learning

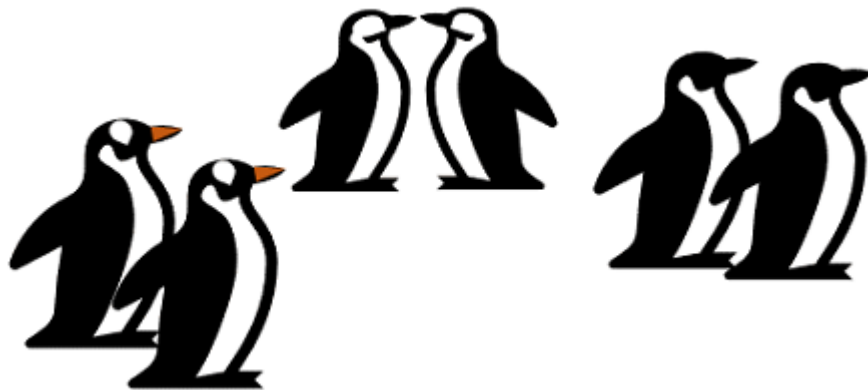
- Group images into categories





# Clustering Machine Learning

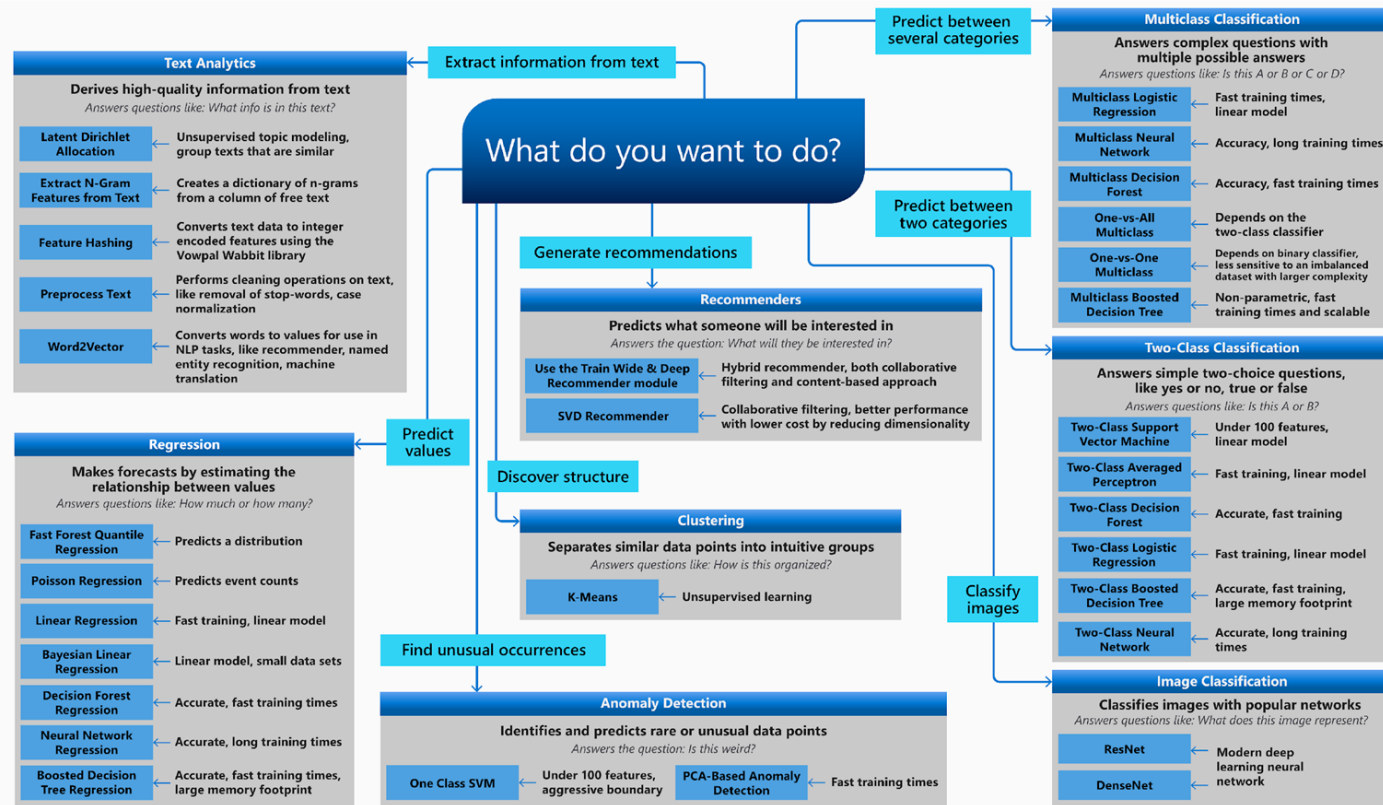
- Grouping unlabeled examples





# 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.

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### 3. Run OnVUE

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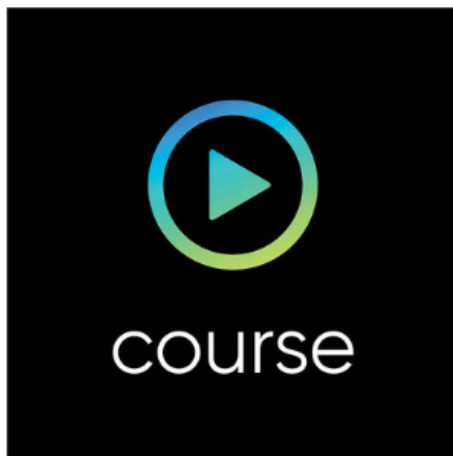


COURSE

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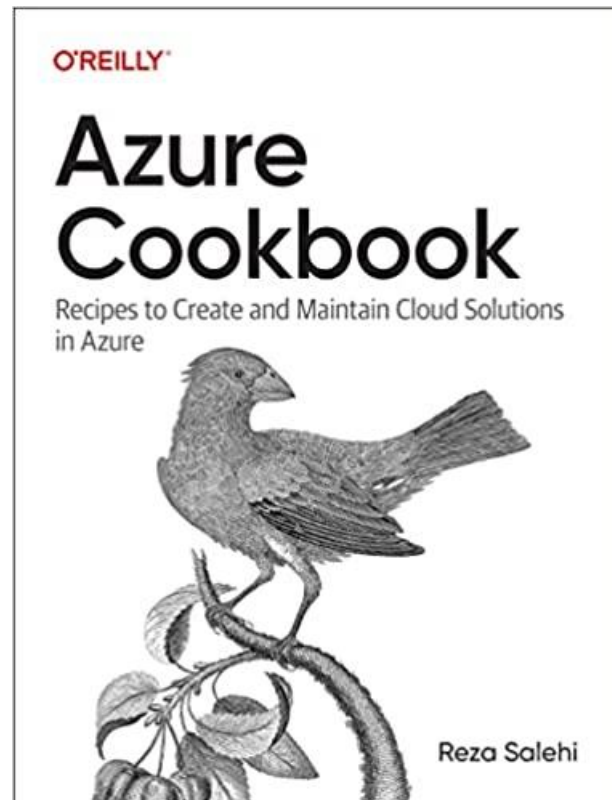


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# Thank you!

Reza Salehi

@zaalion

