Exam AI-900: Microsoft Azure AI Fundamentals

Introduction

Microsoft Azure AI Fundamentals (Exam AI-900) certification is developed as an introductory knowledge hub for professionals who aspire to diverge into the world of Azure ML and AI. Furthermore, the AI-900 validates that the candidate is aware of the following skills: AI workloads; fundamental principles of machine learning on Azure; computer vision workloads on Azure, and features of NLP workloads on Azure. Henceforth, the AI-900 certification can act as a stepping stone for candidates for building a long-term career in Azure AI and data science.

Course Outline

MODULE 1: Describe AI workloads and considerations (15-20%)

- Identify features of common AI workloads
  - identify prediction/forecasting workloads
  - identify features of anomaly detection workloads
  - identify computer vision workloads
  - identify natural language processing or knowledge mining workloads
  - identify conversational AI workloads

- Identify guiding principles for responsible AI
  - describe considerations for fairness in an AI solution
  - describe considerations for reliability and safety in an AI solution
  - describe considerations for privacy and security in an AI solution
  - describe considerations for inclusiveness in an AI solution
  - describe considerations for transparency in an AI solution
  - describe considerations for accountability in an AI solution

MODULE 2: Describe fundamental principles of machine learning on Azure (30-35%)

- Identify common machine learning types
  - identify regression machine learning scenarios
  - identify classification machine learning scenarios
  - identify clustering machine learning scenarios

- Describe core machine learning concepts
  - identify features and labels in a dataset for machine learning
  - describe how training and validation datasets are used in machine learning
  - describe how machine learning algorithms are used for model training
  - select and interpret model evaluation metrics for classification and regression

- Identify core tasks in creating a machine learning solution
  - describe common features of data ingestion and preparation
  - describe feature engineering and selection
  - describe common features of model training and evaluation
  - describe common features of model deployment and management

- Describe capabilities of no-code machine learning with Azure Machine Learning studio
  - automated ML UI
  - Azure Machine Learning designer

MODULE 3: Describe features of computer vision workloads on Azure (15-20%)

- Identify common types of computer vision solution:
  - identify features of image classification solutions
  - identify features of object detection solutions

    - identify features of optical character recognition solutions
    - identify features of facial detection, facial recognition, and facial analysis solutions

- Identify Azure tools and services for computer vision tasks
    - identify capabilities of the Computer Vision service
    - identify capabilities of the Custom Vision service
    - identify capabilities of the Face service
    - identify capabilities of the Form Recognizer service

MODULE 4: Describe features of Natural Language Processing (NLP) workloads on Azure (15-20%)

- Identify features of common NLP Workload Scenarios
    - identify features and uses for keyphrase extraction
    - identify features and uses for entity recognition
    - identify features and uses for sentiment analysis
    - identify features and uses for language modeling
    - identify features and uses for speech recognition and synthesis
    - identify features and uses for translation

- Identify Azure tools and services for NLP workloads
    - identify capabilities of the Text Analytics service
    - identify capabilities of the Language Understanding service (LUIS)
    - identify capabilities of the Speech service
    - identify capabilities of the Translator Text service

MODULE 5: Describe features of conversational AI workloads on Azure (15-20%)

- Identify common use cases for conversational AI
    - identify features and uses for webchat bots
    - identify common characteristics of conversational AI solutions

- Identify Azure services for conversational AI
    - identify capabilities of the QnA Maker service
    - identify capabilities of the Azure Bot Service

Prerequisites

None.

The Azure AI Fundamentals course is designed for anyone interested in learning about the types of solutions artificial intelligence (AI) makes possible, and the services on Microsoft Azure that you can use to create them. You don't need to have any experience of using Microsoft Azure before taking this course, but a basic level of familiarity with computer technology and the Internet is assumed. Some of the concepts covered in the course require a basic understanding of mathematics, such as the ability to interpret charts. The course includes hands-on activities that involve working with data and running code, so knowledge of fundamental programming principles will be helpful.

Target Audience

Candidates for this exam should have a foundational knowledge of machine learning (ML) and artificial intelligence (AI) concepts and related Microsoft Azure services.

This exam is an opportunity to demonstrate knowledge of common ML and AI workloads and how to implement them on Azure.

This exam is intended for candidates with both technical and non-technical backgrounds. Data science and software engineering experience are not required; however, some general programming knowledge or experience 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.

Duration

32 Hours