A comprehensive study guide that will provide you with great preparation tools for the AI-900: Microsoft Azure AI Fundamentals

AI-900 Official Course Study Guide

Jordi Koenderink 7/4/2021

Introduction

Welcome to the AI-900 Study Guide. This guide will go over each topic of the skills outline, provided by Microsoft for the AI-900: Microsoft Azure AI Fundamentals exam.

Candidates for this exam should have 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.

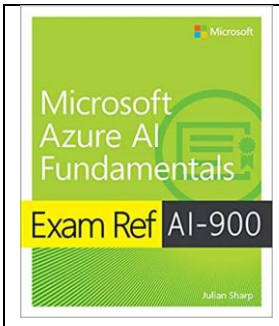
This exam is intended for candidates with both technical and non-technical backgrounds. Data science and software engineering experience are not required; however, some general programming knowledge or experience would be beneficial.

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's not a prerequisite for any of them.

About the exam:

- Taking the exam will cost you $165 US dollars.
- Microsoft certification exams are scored out of 1000 points. You need 700 points or higher to pass the AI-900 exam and gain your Azure AI Fundamentals.
- The AI-900 exam will need to be renewed every year. Microsoft will from time to time retire certifications, however, and you may also find exam numbers evolve when Microsoft changes the curriculum substantially for the certification.
- The exam will have around 55 questions for which you have 3h to answer.
- As of this moment of writing, there're no labs.

Book/e-book:

	**Exam Ref AI-900 Microsoft Azure AI Fundamentals** Exam Ref AI-900 Microsoft Azure AI Fundamentals offers professional-level preparation that helps candidates maximize their exam performance and sharpen their skills on the job. It focuses on the specific areas of expertise modern IT professionals need to demonstrate real-world mastery of common machine learning (ML) and artificial intelligence (AI) workloads and how to use them in Azure. Amazon.com: Exam Ref AI-900 Microsoft Azure AI Fundamentals: Sharp, Julian: 9780137358038: Amazon.com: Books Amazon Canada: Exam Ref Ai-900 Microsoft Azure AI Fundamentals: Sharp, Julian: 9780137358038: Books - Amazon.ca Amazon NL: Exam Ref AI-900 Microsoft Azure AI Fundamentals: Sharp, Julian: Amazon.nl

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Video training:

Udemy	This course goes over each requirement of the exam in detail. If you have no background in machine learning and want to learn about it and want to learn more about AI / ML concepts and services within Azure, or have some background in machine learning and want to progress eventually to an Azure Data Engineer or Data Analyst type role, this course is a great resource for you. https://www.udemy.com/course/ai900-azure/
PLURALSIGHT	In this fast-paced course, AI: Executive Briefing, you will start at the beginning—with the fundamental concepts and terms of Artificial Intelligence. First, you'll go over the cliches—the things "everybody knows" about AI—and use them to explore several core concepts. Next, you will explore multiple different ways AI can be implemented, including Machine Learning, Deep Learning and Natural Language Processing. Finally, you will explore the AI marketplace and current AI issues and risks. When you are finished with this course, you will have practical, pragmatic understanding of the current state of Artificial Intelligence as it is being used today. AI: Executive Briefing | Pluralsight
	Whizlabs' Microsoft Azure Exam AI-900 Online Course helps Professionals to prepare themselves for the actual certification exam. Microsoft Azure Exam AI-900 Certification | Online Course | Whizlabs

	In this course you' learn about the features of Microsoft Azure AI and get an overview of the concepts covered in the AI-900 certification exam. Explore AI, machine learning, and data science. Emilio Melo discusses cognitive services, computer vision image analysis, natural language processing (NLP), speech APIs, and more. Exam Tips: Microsoft Azure AI Fundamentals (AI-900) (linkedin.com)

Microsoft Learn:

Those tutorial/paths have been combined by Microsoft and published for free. They contain a collection of text, videos, and exercises for the exam.

	AI-900: Get started with artificial intelligence on Azure Artificial Intelligence (AI) empowers amazing new solutions and experiences; and Microsoft Azure provides easy to use services to help you get started. Get started with artificial intelligence on Azure - Learn | Microsoft Docs
	AI-900: Use visual tools to create machine learning models with Azure Machine Learning Machine learning is at the core of artificial intelligence, and many modern applications and services depend on predictive machine learning models. Learn how to use Azure Machine Learning to create and publish models without writing code. Use visual tools to create machine learning models with Azure Machine Learning - Learn | Microsoft Docs
	AI-900: Explore computer vision in Microsoft Azure Computer vision is an area of artificial intelligence (AI) in which software systems are designed to perceive the world visually, though cameras, images, and video. There are multiple specific types of computer vision problem that AI engineers and data scientists can solve using a mix of custom machine learning models and platform-as-a-service (PaaS) solutions - including many cognitive services in Microsoft Azure.

	Explore computer vision in Microsoft Azure - Learn | Microsoft Docs
	**AI-900: Explore natural language processing** Natural language processing supports applications that can see, hear, speak with, and understand users. Using text analytics, translation, and language understanding services, Microsoft Azure makes it easy to build applications that support natural language. Explore Natural Language Processing in Microsoft Azure - Learn | Microsoft Docs
	**AI-900: Explore conversational AI** Conversational AI is an artificial intelligence workload that deals with dialogs between AI agents and human users. Explore Conversational AI with Microsoft Azure - Learn | Microsoft Docs

Practice exams

Those are practice exams and not dumps. I do not encourage dumps as they ruin the certification value for everyone.

	**Whizlabs – Microsoft Azure Exam AI-900 Practice Tests** Practice tests are designed by experts to simulate the real exam scenario. AI-900 questions are based on the exam syllabus outlined by official documentation. The questions that appear in each practice test are unique and not repeated in other practice tests. These practice tests are provided to the candidates to gain more confidence in exam preparation and self-evaluate them against the exam content. What's inside: • 2 Full-Length Mock Exams (110 Unique Questions) • Objective-based Practice Tests • Exhaustive Explanation with every question • Reports to assess strengths & weaknesses • Unlimited Access Microsoft Azure Exam AI-900 Certification | Practice Tests | Whizlabs

This guide is divided up into the following sections and is also part of the exam:

- Describe AI workloads and considerations (15-20%)
- Describe fundamental principles of machine learning on Azure (30-35%)
- 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 conversational AI workloads on Azure (15-20%)

Feel free to join our Facebook Azure Study Group, or check out the Azure courses on Udemy. Errors and suggestions can also be reported in the Azure Group on Facebook.

Thank you,

Software Architect Team
Jordi Koenderink

Contents

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

Identify features of common AI workloads

Identify prediction/forecasting workloads

Demand Forecasting - Azure Solution Ideas | Microsoft Docs

Demand forecasting and price optimization - Azure Solution Ideas | Microsoft Docs

Demand forecasting for shipping and distribution - Azure Solution Ideas | Microsoft Docs

Personalized Offers - Azure Solution Ideas | Microsoft Docs

Identify features of anomaly detection workloads

Anomaly Detector - Anomaly Detection System | Microsoft Azure

Identify computer vision workloads

Content tags - Computer Vision - Azure Cognitive Services | Microsoft Docs

Object detection - Computer Vision - Azure Cognitive Services | Microsoft Docs

Brand detection - Computer Vision - Azure Cognitive Services | Microsoft Docs

Image categorization - Computer Vision - Azure Cognitive Services | Microsoft Docs

Image descriptions - Computer Vision - Azure Cognitive Services | Microsoft Docs

Identify natural language processing or knowledge mining workloads

Choosing a natural language processing technology - Azure Architecture Center | Microsoft Docs

Identify conversational AI workloads

Microsoft Conversational AI tools enable developers to build, connect and manage intelligent bots | Azure Blog and Updates | Microsoft Azure

Identify guiding principles for responsible AI

Describe considerations for fairness in an AI solutiondescribe considerations for reliability and safety in an AI solution

Responsible AI principles from Microsoft

FATE: Fairness, Accountability, Transparency, and Ethics in AI - Microsoft Research

Describe considerations for privacy and security in an AI solution

Responsible AI principles from Microsoft

FATE: Fairness, Accountability, Transparency, and Ethics in AI - Microsoft Research

Describe considerations for inclusiveness in an AI solution

Responsible AI principles from Microsoft

FATE: Fairness, Accountability, Transparency, and Ethics in AI - Microsoft Research

Describe considerations for transparency in an AI solution

Responsible AI principles from Microsoft

FATE: Fairness, Accountability, Transparency, and Ethics in AI - Microsoft Research

Describe considerations for accountability in an AI solution

Responsible AI principles from Microsoft

FATE: Fairness, Accountability, Transparency, and Ethics in AI - Microsoft Research

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

Identify common machine learning types

Identify regression machine learning scenarios

ML Studio (classic): Linear Regression - Azure | Microsoft Docs

Identify classification machine learning scenarios

ML Studio (classic): Initialize Classification Models - Azure | Microsoft Docs

Identify clustering machine learning scenarios

ML Studio (classic): Initialize Clustering Models - Azure | Microsoft Docs

Describe core machine learning concepts

Identify features and labels in a dataset for machine learning

Framing: Key ML Terminology | Machine Learning Crash Course (google.com)

Describe how training and validation datasets are used in machine learning

About Train, Validation and Test Sets in Machine Learning | by Tarang Shah | Towards Data Science

Describe how machine learning algorithms are used for model training

Which machine learning algorithm should I use? - The SAS Data Science Blog

Select and interpret model evaluation metrics for classification and regression

ML Studio (classic): Evaluate Model - Azure | Microsoft Docs

ML Studio (classic): Evaluate Model - Azure | Microsoft Docs

Identify core tasks in creating a machine learning solution

Describe common features of data ingestion and preparation

AI Workflow: Data ingestion - Data Ingestion | Coursera

Data Preparation for Machine Learning | DataRobot Artificial Intelligence Wiki

Describe feature engineering and selection

(Tutorial) Feature Selection in Python - DataCamp

Representation: Feature Engineering | Machine Learning Crash Course (google.com)

Describe common features of model training and evaluation

Model Training with Machine Learning - Data Science Primer (elitedatascience.com)

ML Studio (classic): Evaluate Model - Azure | Microsoft Docs

Introduction to Machine Learning Model Evaluation | by Steve Mutuvi | Heartbeat (fritz.ai)

Describe common features of model deployment and management

Deploy real-time machine learning services with Azure Machine Learning - Learn | Microsoft Docs

MLOps: ML model management - Azure Machine Learning | Microsoft Docs

Describe capabilities of no-code machine learning with Azure Machine Learning studio

Automated ML UI

What is automated ML? AutoML - Azure Machine Learning | Microsoft Docs

Azure Machine Learning designer

What is the Azure Machine Learning designer? - Azure Machine Learning | Microsoft Docs

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

Identify common types of computer vision solution

Identify features of image classification solutions

Tutorial: Train an example Jupyter Notebook - Azure Machine Learning | Microsoft Docs

Identify features of object detection solutions

Object detection - Computer Vision - Azure Cognitive Services | Microsoft Docs

Identify features of optical character recognition solutions

What is Optical character recognition? - Azure Cognitive Services | Microsoft Docs

Identify features of facial detection, facial recognition, and facial analysis solutions

Face detection and attributes concepts - Azure Cognitive Services | Microsoft Docs

Face recognition concepts - Azure Cognitive Services | Microsoft Docs

Example: Real-time video analysis - Face - Azure Cognitive Services | Microsoft Docs

Identify Azure tools and services for computer vision tasks

identify capabilities of the Computer Vision service

What is Computer Vision? - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Custom Vision service

What is Custom Vision? - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Face service

What is the Azure Face service? - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Form Recognizer service

What is Azure Form Recognizer? - Azure Applied AI Services | Microsoft Docs

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

Identify features of common NLP Workload Scenarios

Identify features and uses for key phrase extraction

Key phrase extraction using the Text Analytics REST API - Azure Cognitive Services | Microsoft Docs

Identify features and uses for entity recognition

Entity Recognition cognitive skill - Azure Cognitive Search | Microsoft Docs

Identify features and uses for sentiment analysis

Tip 72 - Sentiment Analysis with Cognitive Service and Azure | Azure Tips and Tricks (microsoft.github.io)

Identify features and uses for language modeling

MSRLM: a Scalable Language Modeling Toolkit - Microsoft Research

Identify features and uses for speech recognition and synthesis

What is the Speech service? - Azure Cognitive Services | Microsoft Docs

Speech-to-text quickstart - Speech service - Azure Cognitive Services | Microsoft Docs

Identify features and uses for translation

App Features - Microsoft Translator

Identify Azure tools and services for NLP workloads

Identify capabilities of the Text Analytics service

Text mining and analysis with the Text Analytics API - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Language Understanding service (LUIS)

Language Understanding (LUIS) Overview - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Speech service

What is the Speech service? - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Translator Text service

Translator Text API - Microsoft Translator for Business

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

Identify common use cases for conversational AI

Identify features and uses for webchat bots

Web Chat overview - Bot Service | Microsoft Docs

Identify common characteristics of conversational AI solutions

Microsoft Conversational AI tools enable developers to build, connect and manage intelligent bots | Azure Blog and Updates | Microsoft Azure

Identify Azure services for conversational AI

Identify capabilities of the QnA Maker service

What is QnA Maker service? - Azure Cognitive Services | Microsoft Docs

Identify capabilities of the Azure Bot service

Azure Bot Services | Microsoft Azure