

AI Certification Training

HCIA-AI Certification Training

Training Path

1	Overview of AI	
	Lecture	0,20 days

2	Python Programming Basics	
	Lecture and demonstration	0,70 days

3	Basic Math	
	Lecture	0,70 days

4	Introduction to TensorFlow	
	Lecture and demonstration	0,20 days

5	Propaedeutics and Overview of Deep Learning	
	Lecture	0,70 days

6	Huawei Cloud EI Overview	
	Lecture and demonstration	0,20 days

7	Python Programming Basics Experimental Guide	
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	Experiment	1,0 days

8	Basic Math Experimental Guide	
	Experiment	1,0 days

9	TensorFlow Programming Basics Experimental Guide	
	Experiment	1,0 days

10	Image Recognition Programming Experimental Guide	
	Experiment	1,0 days

11	Speech Recognition Programming Experimental Guide	
	Experiment	1,0 days

12	Man-Machine Dialogue Programming Experimental Guide	
	Experiment	1,0 days

Intended Trainees

Those who hope to become AI engineers

Those who hope to obtain an HCIA-AI certificate

Those who hope to know how to use, manage, and maintain Huawei AI products and AI cloud services

Prerequisites

- Have a good command of network technology basics.
- Be familiar with basic operations on Linux operating systems.
- Have a good command of Further Mathematics basics.

Objectives

After completing these courses, you will be able to:

- Understand the overview of AI.
- Master the Python programming language.
- Master the Math basics required for deep learning.
- Understand the overview of the TensorFlow.
- Understand the propaedeutics and overview of deep learning.
- Understand the overview of Huawei cloud EI.
- Know how to perform basic programming using Python.
- Know how to perform mathematical programming using Python.
- Know how to perform basic programming using TensorFlow.
- Know how to perform basic programming for image recognition.
- Know how to perform basic programming for speech recognition.
- Know how to perform basic programming for man-machine dialogs.

Training Contents

Chapter 1 Overview of AI

- The Past, Present, and Future of AI
- Development of AI Industries
- Strategic Planning of AI in the World
- Justice and Equity in the Era of AI
- Man-Machine Relationship in the Era of AI
- AI Governance
- AI Society in the Future

Chapter 2 Python Programming Basics

- Introduction to Python
- List and Tuple
- String
- Dictionary
- Conditional and Loop Statements
- Function
- Object-Oriented Programming
- Date and Time
- Regular Expression
- File Manipulation

Chapter 4 Basic Math

- Linear Algebra
 - Special Matrices
 - Eigendecomposition
 - Singular Value Decomposition
 - Moore-Penrose Pseudoinverse
 - Trace Operator
 - Determinants
 - Example: Principal Component Analysis
- Probability and Information Theory
 - Random Variables
 - Probability Distribution
 - Marginal Probability
 - Conditional Probability
 - Independence and Conditional Independence
 - Expectation, Variance, and Covariance
 - Common Probability Distribution
 - Bayesian Rules

- Continuous Variable
- Information Theory
- Structured Statistical Model
- Numeric Calculation
 - Overflow and Underflow
 - Ill-Condition
 - Gradient Based Optimization Method
 - Constraint Optimization
 - Example: Linear Least squares

Chapter 4 Introduction to TensorFlow

- What Is TensorFlow?
- TensorFlow Characteristics
- TensorFlow Basics
- TensorFlow Modules
- Development Environment Deployment
- Basic Development Steps Using TensorFlow
 - Defining the TensorFlow Input Node
 - Defining the Learning Parameter Variable
 - Defining the Operation
 - Optimizing Functions and Objectives
 - Initializing All Variables
 - Iterate and Update Parameters to the Optimal Solution
 - Testing the Model
 - Using the Model
- Other Deep Learning Frameworks

Chapter 5 Propaedeutics and Overview of Deep Learning

- Propaedeutics of Deep Learning
 - Learning Algorithms

- Common Machine Learning Algorithms
- Hyperparameter and Validation Set
- Parameter Estimation
- Maximum Likelihood Estimation
- Bayes Estimation
- Overview of Deep Learning
 - Definition and Development of Neural Networks
 - Perceptron and Training Rules
 - Activation Functions
 - Types of Neural Networks
 - Regularization in Deep Learning
 - Optimizer
 - Applications of Deep Learning

Chapter 7 Huawei Cloud EI Overview

- Concept of AI and Origin of EI
- Details About Huawei Cloud EI
 - Basic Platform Services
 - Common Services
 - Industry-specific Services

Chapter 8 Python Programming Basics Experimental Guide

- List and Tuple
- String
- Dictionary
- Conditional and Loop Statements
- Function
- Object-Oriented Programming
- Date and Time
- Regular Expression

- File Manipulation

Chapter ^ Basic Math Experimental Guide

- Linear Algebra Practices
- Probability Theory Practices
- Numerical Computation Example Practices
- Scenario

Chapter 9 TensorFlow Programming Basics Experimental Guide

- Eight Knowledge Points
 - Hello World
 - Session
 - Matrix Multiplication
 - Definition of Variables
 - TensorBoard Visualization
 - Data Read and Processing
 - Graph Operation
 - Saving and Using Models

- Linear Regression — House Price Prediction

Chapter 10 Image Recognition Programming Experimental Guide

Chapter 11 Speech Recognition Programming Experimental Guide

Chapter 12 Man-Machine Dialogue Programming Experimental Guide

Duration

Six working days

Class size

A maximum of 16 trainees