# Implement knowledge mining with Azure AI Search Training

Duration: **1 Day**

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Organisations generate vast amounts of structured and unstructured data, yet much of its value remains untapped. This learning path explores how to use Azure AI Search to unlock that value by transforming raw data into searchable, enriched, and actionable insights.

We believe organisations that can connect data, AI, and cloud technologies will gain a significant competitive advantage. In this learning path, learners will design knowledge mining solutions that use AI enrichment pipelines to extract meaning from content, improve discoverability, and enable intelligent applications. The focus is on practical implementation, showing how to build scalable search solutions that combine indexing, enrichment, and analytics within Azure environments.

## Prerequisites

Participants should have:

- Familiarity with Microsoft Azure services and concepts
- Application development experience using C# or Python
- Understanding of data processing and integration concepts is beneficial
- Basic knowledge of APIs and data workflows is recommended

### Target audience

This learning path is designed for:

- Developers building intelligent search and discovery applications
- AI engineers implementing data enrichment and analysis pipelines
- Solution architects designing scalable data and AI solutions
- Technical professionals working with Azure-based data platforms

## What You Will Learn

By the end of this learning path, learners will be able to:

- Design and implement knowledge mining solutions using Azure AI Search
- Create, manage, and optimise search indexes and indexers
- Enrich data using built-in and custom AI skills
- Persist enriched outputs in knowledge stores for downstream use
- Implement advanced search features to improve relevance and user experience
- Integrate data from multiple sources within and outside Azure

## Training Outline

Introduction to knowledge mining and Azure AI Search

- Overview of knowledge mining concepts and benefits

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- Understanding Azure AI Search architecture and components
- Key use cases for intelligent search and data discovery
- Challenges in extracting insights from complex data sets

Creating an Azure AI Search solution

- Setting up and configuring Azure AI Search services
- Designing search solutions for scalability and performance
- Managing service tiers, capacity, and cost considerations
- Connecting to data sources within Azure

Indexing and managing data

- Creating and configuring search indexes
- Using indexers to automate data ingestion
- Mapping fields and managing schema design
- Handling structured and unstructured data sources

AI enrichment pipelines and custom skills

- Introduction to AI enrichment in Azure AI Search
- Using built-in cognitive skills for text and image processing
- Developing and integrating custom skills
- Orchestrating enrichment pipelines for complex workflows

Persisting enrichment output with knowledge stores

- Understanding knowledge stores and their purpose
- Storing enriched data for analytics and reporting
- Designing data structures for downstream consumption
- Integrating with analytics tools and dashboards

Implementing advanced search and relevance features

- Full-text search and filtering techniques
- Relevance tuning and scoring profiles
- Implementing semantic search capabilities
- Enhancing user experience with intelligent ranking

Integrating external data sources and workflows

- Indexing data from external systems and repositories
- Using Azure Data Factory for data movement and orchestration
- Building end-to-end pipelines for knowledge extraction
- Ensuring data freshness and consistency

## Exams and assessments

There are no formal exams included in this learning path. Learners will complete knowledge checks and guided exercises to reinforce understanding of Azure AI Search capabilities and knowledge mining solution design.

## Hands-on learning

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This learning path includes:

- Practical exercises for creating and managing search indexes
- Guided labs for building AI enrichment pipelines
- Scenario-based tasks focused on real-world knowledge mining use cases
- Activities integrating Azure AI Search with external data sources