

AI-900

Document Intelligence and Knowledge Mining



AI-900 Agenda



1: AI Overview

2: Computer Vision

3: Natural Language Processing

4: Document Intelligence and Knowledge Mining ← Index

5: Generative AI

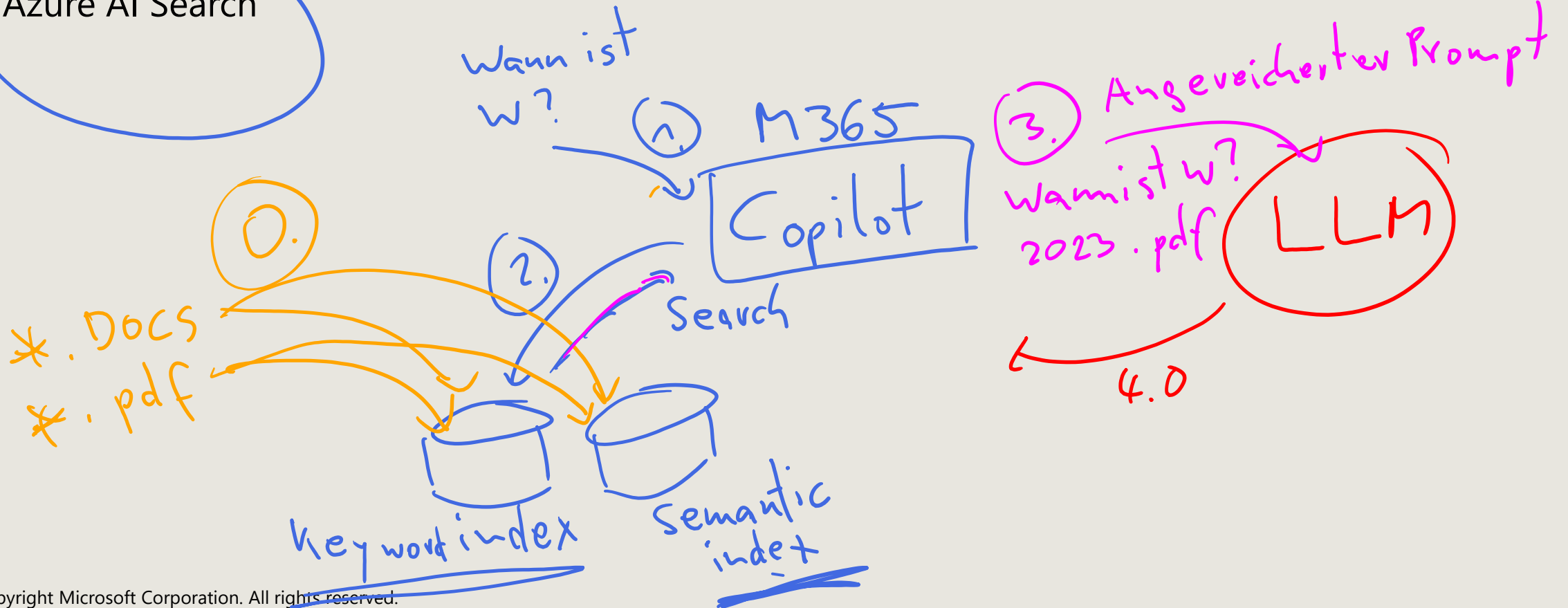
LP Agenda

- Azure AI Document Intelligence
- Azure AI Search

Retrieval Augmented Generation

RA G

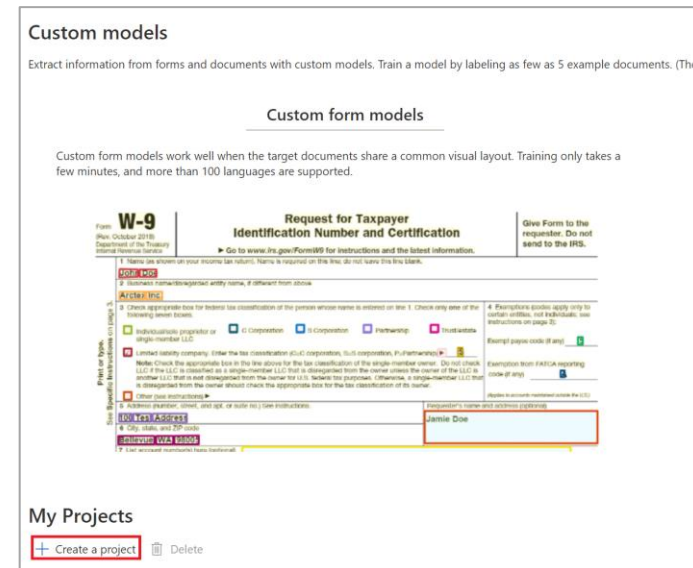
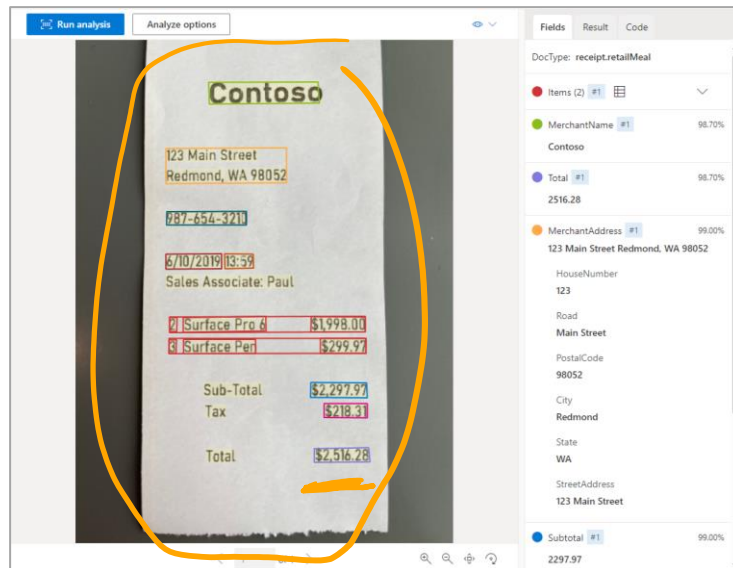
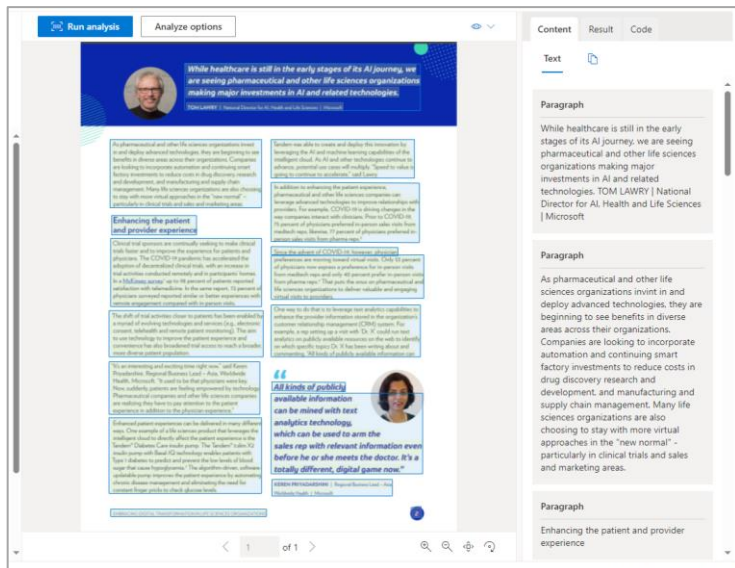
Azure OpenAI service



Azure AI Document Intelligence



AI Document Intelligence services



- Document analysis

- Returns structured data representations.
- Regions of interest and relationships.
- Configure **Analyze options** for free and chargeable analysis

- Prebuilt models

- Invoices
- Receipts
- ID
- Recognizes and extracts key-value pairs.

- Custom models

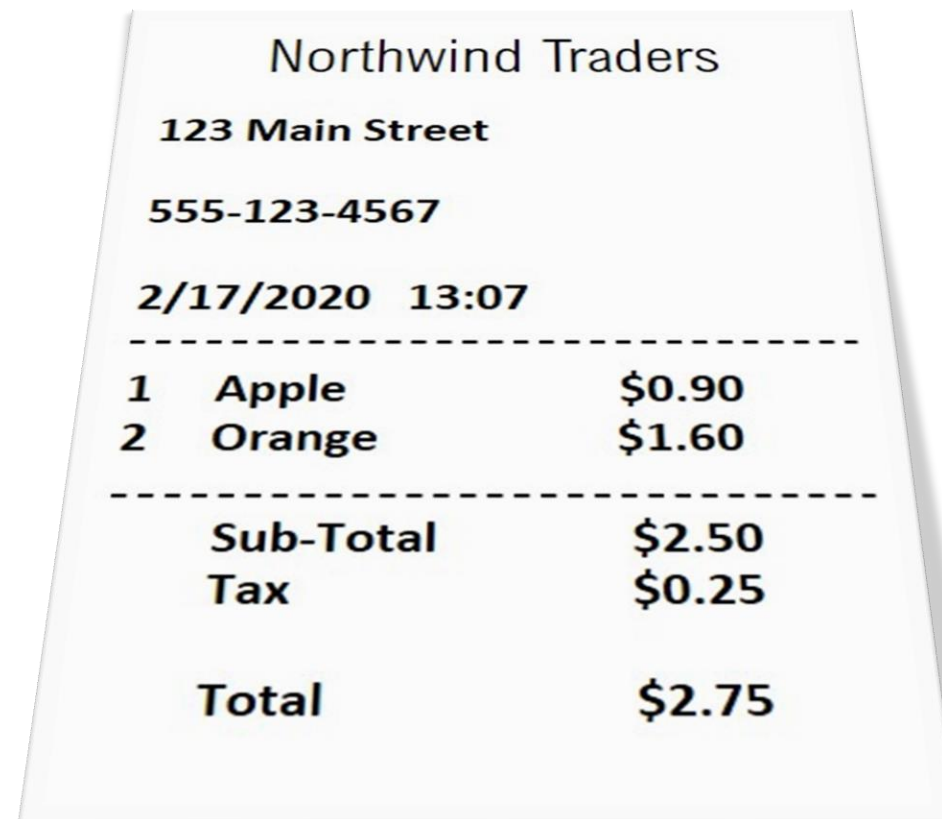
- Train models with at least five sample data.
- Identify fields of interest to your organization.

Analyzing forms with the *Document Intelligence* service

Extract information from scanned forms in image or PDF format.

- Use the pre-trained models for common document types, such as invoices, receipts, IDs, etc.
- Train a custom model using your own forms.

Models perform *semantic recognition* of form fields – not just text extraction.



A receipt from Northwind Traders. The receipt is white with black text and is tilted slightly to the right. It is enclosed in a purple rectangular border. The text on the receipt is as follows:

Northwind Traders
123 Main Street
555-123-4567
2/17/2020 13:07

1	Apple	\$0.90
2	Orange	\$1.60

Sub-Total	\$2.50
Tax	\$0.25
Total	\$2.75

Document Intelligence Studio

Getting started with Document Intelligence

- Using a **no code** approach you can explore the functionality using samples and your own documents.
- First - **create a resource**
 - Document Intelligence resource
 - AI services resource
- Then **Enable** the resource in Document Intelligence Studio.
- **Getting Started** page: select a model to try.

Azure AI | Document Intelligence Studio

[Form Recognizer Studio](#)

Get started with Document Intelligence Studio

Extract text, key-value pairs, tables, and structures from forms and documents using common layouts and prebuilt models, or create your own custom models. [Learn more](#)

Document analysis

Extract text, tables, structure, key-value pairs, and named entities from documents.



Read

Extract printed and handwritten text along with barcodes, formulas and font styles from images and documents.

[Try it out](#)



Layout

Extract tables, check boxes, and text from forms and documents.

[Try it out](#)



General documents

Extract key value pairs and structure like tables and selection marks from any form or document.

[Try it out](#)

Prebuilt models

Extract data from unique document types using the following prebuilt models.



Exercise: Extract form data in Document Intelligence Studio



In this exercise, you will explore the **Azure AI Document Intelligence** service to analyze a receipt.

1. Use the hosted environment and Azure credentials provided for this exercise.
2. The instructions are also available on Learn: <https://aka.ms/ai900-document-intelligence>

Azure AI Search



What is knowledge mining?

Organizations have a lot of content

- Data is *locked away* in documents, PDFs, hand-written notes, etc.
- Time consuming and labour intensive to find data.
- Knowledge mining finds insights – *at scale*.
- **Azure AI Search** is Azure's AI-powered knowledge mining platform.
- Solutions provide access through, for example:
 - Search, eg bots to answer questions
 - Dashboards
 - Business applications
 - Availability for further analysis



Azure AI Search solutions



- **Ingest**

- Azure Blob Storage containers
- Azure SQL Database Documents in Cosmos DB
- Azure Data Lake Storage Gen2
- Azure Table Storage



- **AI enrichment & index**

- AI enables deeper understanding
 - Extract information & patterns
- Azure AI services
 - Vision, Natural Language Processing, etc.
- Indexing makes content searchable



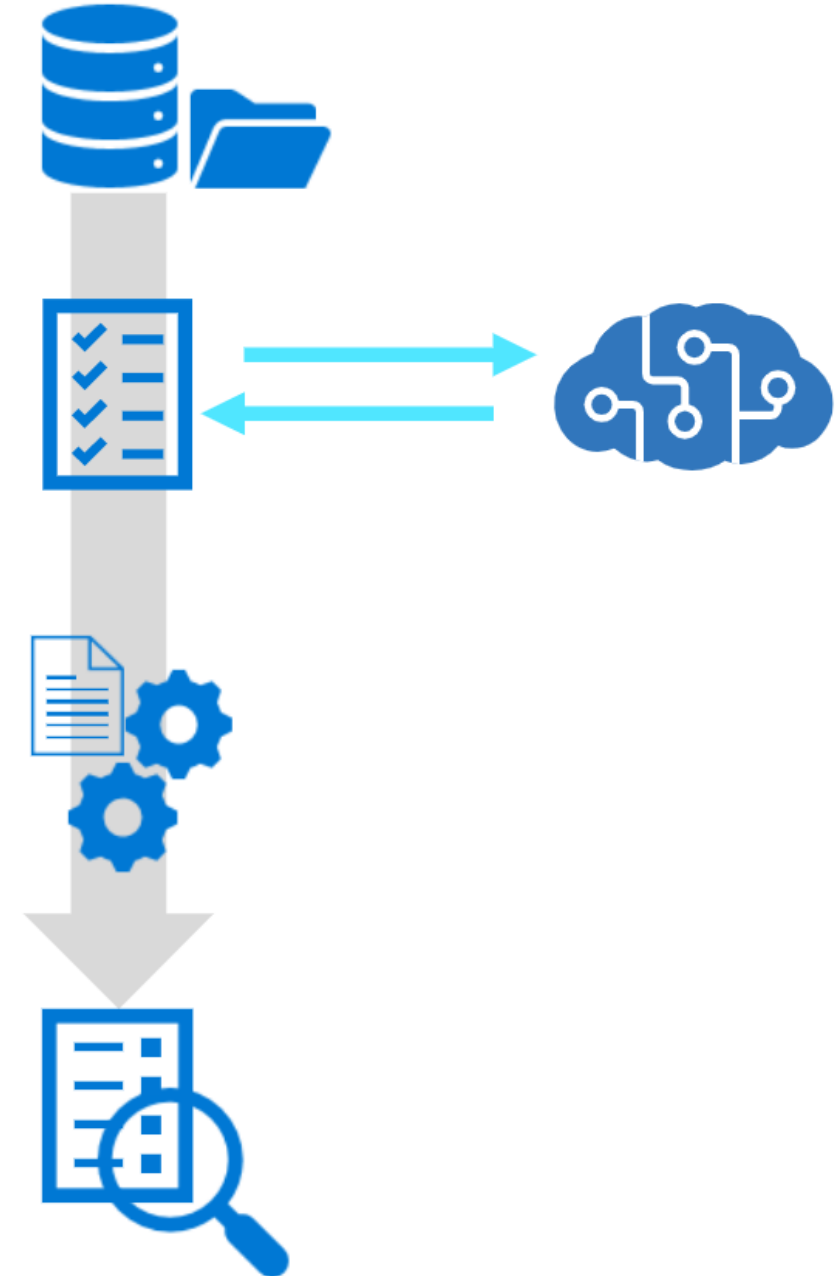
- **Explore**

- Search performed on indexes
- Results used:
 - Within applications
 - Create data visualizations

AI enrichment

In Azure AI Search

- AI enrichment makes content more useful for search purposes.
- Enriched content is created by *skillsets* that:
 - Recognize entities in text
 - Translate text
 - Evaluate sentiment
- A *skillset* produces enriched *documents*
 - Consumed during *indexing*
 - Projected to a *knowledge store*
- Serialized data is passed to the search engine for indexing.
- Knowledge store
 - *Data sink* created by an AI Search enrichment pipeline.



Knowledge check



Which problem is Document Intelligence designed to solve?

- ☐ Reading text from large volumes of scanned documents
- ☐ Extracting key value pairs from forms, for input into a database
- ☐ Extracting positive and negative sentiment from scanned images

You want to extract information and perform semantic recognition on the extracted fields. What service would you use?

- ☐ AI Vision
- ☐ Optical Character Recognition
- ☐ AI Document Intelligence

Which two steps are part of building a AI Search solution?

- ☐ Creating databases of structured data, and indexing the data
- ☐ AI enrichment and indexing
- ☐ Identifying necessary skillsets to build indexes

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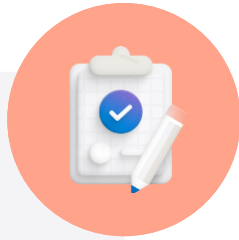
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Summary



Azure AI Document Intelligence

- What is AI Document Intelligence?
- Three types of AI Document Intelligence services
- Analyzing specific forms with the AI Document Intelligence service

Azure AI Search

- What is knowledge mining?
- Three step process to creating a knowledge store with Azure AI Search

