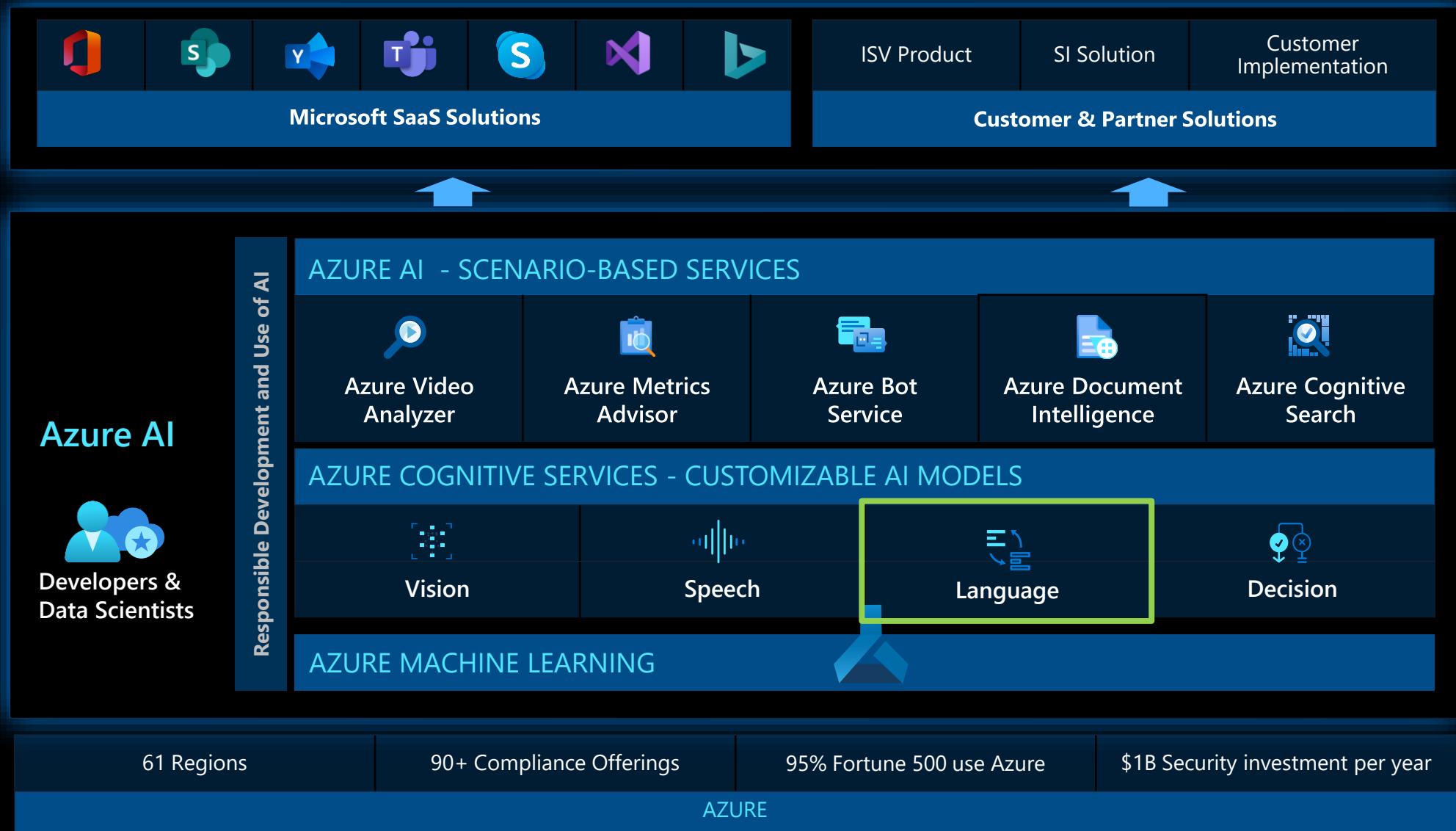




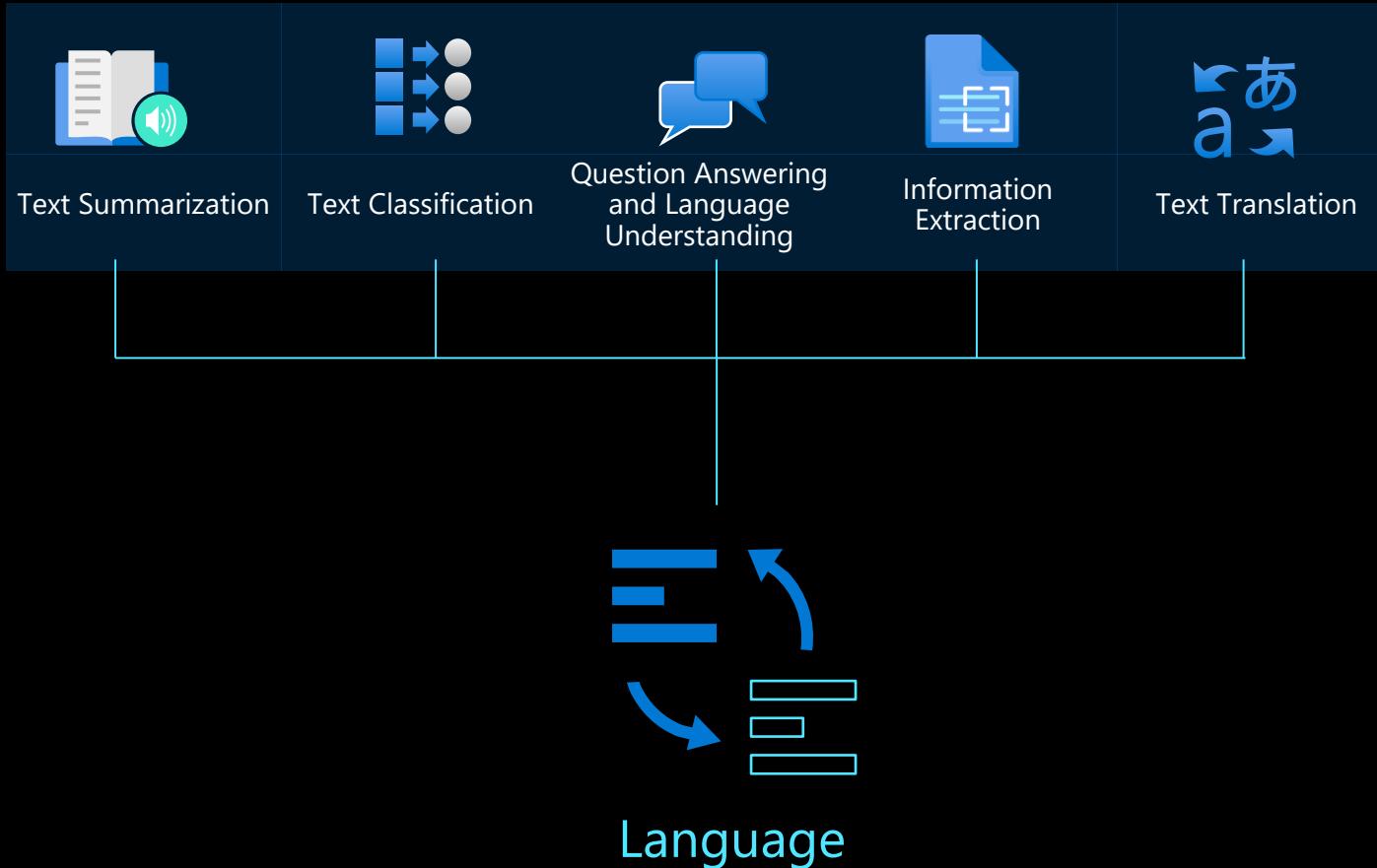
Azure AI: Language Service Overview



Azure AI



Cognitive Services Language Pillar



Language Service Overview

Cloud-based service that provides Natural Language Processing (NLP) features for understanding and analyzing text.

Includes the web-based **Language Studio** as well as REST APIs and client libraries.

Offers two types of features

- **Preconfigured** (non-customizable AI models)
- **Customizable** (you can train the AI model)

Language Service Features

Information Extraction

Text Classification

Question Answering and Language Understanding

Text Summarization

Information Extraction

Named Entity Recognition (NER)

Identifies and categorizes entities in unstructured text.

- **Prebuilt model** supports Person Names, Person Types (roles), Locations (countries, cities, structures, geographical features), Organizations, Events (cultural, natural, sports), Products, Skills, Addresses, Phone Numbers, Emails, URLs, IP addresses, Data & Time, and Quantities.
- **Custom model** trained on your data enables extraction of any type of entity.

Personal Identifying Information (PII) Detection

Identifies, categorizes and redacts sensitive information in unstructured text (e.g. phone numbers, email addresses and forms of identification).

Two shapes:

- **PII** – works on unstructured text
- **Conversation PII** – tailored model to work on conversation transcription

Personal Health Information (PHI) Detection

Extracts and labels relevant medical information from a variety of unstructured texts such as doctor's notes, discharge summaries, clinical documents and electronic health records.

- **Prebuild model** supports Anatomy (body structure), Demographics (age, gender, ethnicity), Examinations, Allergens, Course, Direction, Frequency, Time, Measurements, Relational Operators, Genomics (variants, genes or proteins, mutation types), Medical Conditions, Medications, Treatments, Social (family relations, employment, living status, substance use)
- **Custom model** trained on your data enables extraction of any type of entity.

Key Phrase Extraction

Identifies the main concepts in an unstructured text, returning a list of bullets.

Text Classification

Language Detection

Detects the language a document is written in and returns a language code for a wide range of languages, variants, dialects and some regional languages.

Sentiment Analysis and Opinion Mining

Analyses text to mine text for clues about positive or negative sentiment and associate them with specific aspects of the text.

- **Sentiment analysis** provides sentiment labels (positive, negative or neutral) at a sentence and document level.
- **Opinion mining** provides more granular information about the opinions related to words.

Custom Text Classification

Allows you to build custom models for text classification tasks. Supports **single label classification** (single class for each document) or **multi label classification** (a document can be classified with multiple classes).

Custom Sentiment Analysis

Allows you to build custom models for sentiment analysis, trained on your own data.

Question Answering and Language Understanding

Question Answering

Allows you to create a natural conversation layer over your data. Commonly used to build conversational client applications such as chat bots. Uses a **prebuilt** model to get a response by querying a text passage without using a knowledge base.

Custom Question Answering

Customizable version of the Question Answering feature that allows knowledge base management, defining synonyms and metadata, question suggestions and more.

- Uses a **layered ranking** approach with data stored in Azure Cognitive Search, which also serves as the first ranking layer.
- Supports **multi-turn prompts** and **active learning** to improve answer quality.

Conversational Language Understanding (CLU)

Enables users to build custom natural language understanding models to predict the overall intention of an incoming utterance and extract important information from it. Commonly used to build end-to-end conversational bots.

Orchestration Workflow

Enables users to build orchestration models to connect Conversational Language Understanding (CLU) and Question Answering projects. These models serve as a single entry point for the application, predicting which child project to call and automatically routing the requests.

Text Summarization

Document Summarization

Uses natural language processing techniques to generate a summary for documents. Accepts only plain text blocks and supports:

- **Extractive Summarization:** produces a summary by extracting salient sentences within the document.
- **Abstractive Summarization:** generates a summary that may not use the same words as those in the document.

Conversation Summarization

Accepts various speech artifacts to generate different types of summaries for a conversation:

- **Issue/resolution summarization:** call center specific feature that generates a summary of issues and resolutions in conversations
- **Chapter title summarization:** generates suggested chapter titles for the conversation
- **Narrative summarization:** generates call notes, meeting notes or chat summaries.

Custom Summarization

Enables users to build custom models to summarize unstructured text, such as contracts or novels.

Classes GitHub

The screenshot shows a GitHub repository page for the user 'marconsilva' named 'NOVA_AI'. The repository is private. At the top, there are navigation links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. Below the header, the repository name 'NOVA_AI' is displayed with a 'Private' badge. To the right are buttons for Unwatch (1), Fork (0), and Star (0). The main content area shows a 'main' branch with 1 branch and 0 tags. A list of commits is shown, all made by 'marconsilva' 8 minutes ago. The commits are:

- marconsilva moved class 03 files to correct folder (31e3910) 8 minutes ago
- Class Exercises/Class 03 moved class 03 files to correct folder 8 minutes ago
- .gitignore Initial commit 10 minutes ago
- LICENSE Initial commit 10 minutes ago

On the right side, there is an 'About' section with the following details:

- No description, website, or topics provided.
- MIT license
- Activity
- 0 stars
- 1 watching
- 0 forks

https://github.com/marconsilva/NOVA_AI

Exercice 1



Analyze text with Azure AI Language

54 min • Module • 10 Units

★★★★★ 5 (5) [Rate it](#)

Intermediate AI Engineer Developer Azure AI services

The Azure AI Language service enables you to create intelligent apps and services that extract semantic information from text.

Learning objectives

In this module, you'll learn how to use the Azure AI Language service to:

- Detect language from text
- Analyze text sentiment
- Extract key phrases, entities, and linked entities

[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you'll need

- Familiarity with Microsoft Azure and the Azure portal.
- Experience programming with C# or Python.

This module is part of these learning paths

[Develop natural language processing solutions with Azure AI Services](#)

<https://learn.microsoft.com/en-us/training/modules/analyze-text-ai-language/>

Exercice 2



1200 XP

Create question answering solutions with Azure AI Language

46 min • Module • 11 Units

[Feedback](#)

Intermediate AI Engineer Developer Azure AI services Azure AI Foundry

The question answering capability of the Azure AI Language service makes it easy to build applications in which users ask questions using natural language and receive appropriate answers.

Learning objectives

After completing this module, you will be able to:

- Understand question answering and how it compares to language understanding.
- Create, test, publish, and consume a knowledge base.
- Implement multi-turn conversation and active learning.
- Create a question answering bot to interact with using natural language.

[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you should already have:

- Familiarity with Azure and the Azure portal.
- Programming experience

<https://learn.microsoft.com/en-us/training/modules/create-question-answer-solution-ai-language/>

Exercice 3



Build a conversational language understanding model

1 hr 5 min • Module • 10 Units

[Feedback](#)

Intermediate AI Engineer Developer Azure AI services Azure AI Foundry

The Azure AI Language conversational language understanding service (CLU) enables you to train a model that apps can use to extract meaning from natural language.

Learning objectives

After completing this module, you'll be able to:

- Provision Azure resources for Azure AI Language resource
- Define intents, utterances, and entities
- Use patterns to differentiate similar utterances
- Use pre-built entity components
- Train, test, publish, and review an Azure AI Language model

[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you should already have:

<https://learn.microsoft.com/en-us/training/modules/build-language-understanding-model/>

Exercice 4



Custom named entity recognition

53 min • Module • 7 Units

[Feedback](#)

Intermediate AI Engineer Developer Azure AI services

Build a custom entity recognition solution to extract entities from unstructured documents

Learning objectives

After completing this module, you'll be able to:

- Understand tagging entities in extraction projects
- Understand how to build entity recognition projects

[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you should be familiar with:

- The Azure portal
- General functionality of Azure AI Services
- General programming technique

This module is part of these learning paths

Develop natural language solutions in Azure

<https://learn.microsoft.com/en-us/training/modules/custom-name-entity-recognition/>

Exercice 5



Create custom text classification solutions

58 min • Module • 6 Units

[Feedback](#)

Intermediate AI Engineer Developer Azure AI services

The Azure AI Language service enables processing of natural language to use in your own app. Learn how to build a custom text classification project.

Learning objectives

After completing this module, you'll be able to:

- Understand types of classification projects
- Build a custom text classification project
- Tag data, train, and deploy a model
- Submit classification tasks from your own app

[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you should be familiar with:

- The Azure portal

<https://learn.microsoft.com/en-us/training/modules/custom-text-classification/>

Exercice 6



Translate text with Azure AI Translator service

48 min • Module • 8 Units

[Feedback](#)

Intermediate AI Engineer Developer Azure AI services Azure AI Foundry

The Translator service enables you to create intelligent apps and services that can translate text between languages.

Learning objectives

After completing this module, you'll be able to:

- Provision a Translator resource
- Understand language detection, translation, and transliteration
- Specify translation options
- Define custom translations

[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you need

- Familiarity with Microsoft Azure and the Azure portal.
- Programming experience.

<https://learn.microsoft.com/en-us/training/modules/translate-text-with-translator-service/>

Exercice 7



Create speech-enabled apps with Azure AI services

53 min • Module • 9 Units

[Feedback](#)

Intermediate AI Engineer Data Scientist Developer Solution Architect Student Azure AI services

Azure AI Foundry

The Azure AI Speech service enables you to build speech-enabled applications. This module focuses on using the speech-to-text and text to speech APIs, which enable you to create apps that are capable of speech recognition and speech synthesis.

Learning objectives

In this module, you'll learn how to:

- Provision an Azure resource for the Azure AI Speech service
- Implement speech recognition with the Azure AI Speech to text API
- Use the Text to speech API to implement speech synthesis
- Configure audio format and voices
- Use Speech Synthesis Markup Language (SSML)

[Start >](#) [+ Add](#)

Prerequisites

<https://learn.microsoft.com/en-us/training/modules/create-speech-enabled-apps/>

Exercice 8



800 XP

Translate speech with the Azure AI Speech service

47 min • Module • 7 Units

[Feedback](#)

Intermediate AI Engineer Developer Solution Architect Student Azure AI services Azure AI Foundry

Translation of speech builds on speech recognition by recognizing and transcribing spoken input in a specified language, and returning translations of the transcription in one or more other languages.

Learning objectives

In this module, you will learn how to:

- Provision Azure resources for speech translation.
- Generate text translation from speech.
- Synthesize spoken translations.

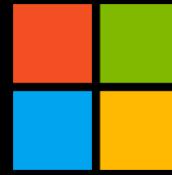
[Start >](#) [+ Add](#)

Prerequisites

Before starting this module, you should have:

- Microsoft Azure account
- Basic understanding of cloud computing

<https://learn.microsoft.com/en-us/training/modules/translate-speech-speech-service/>



Microsoft Azure

Invent with purpose.

Thank you