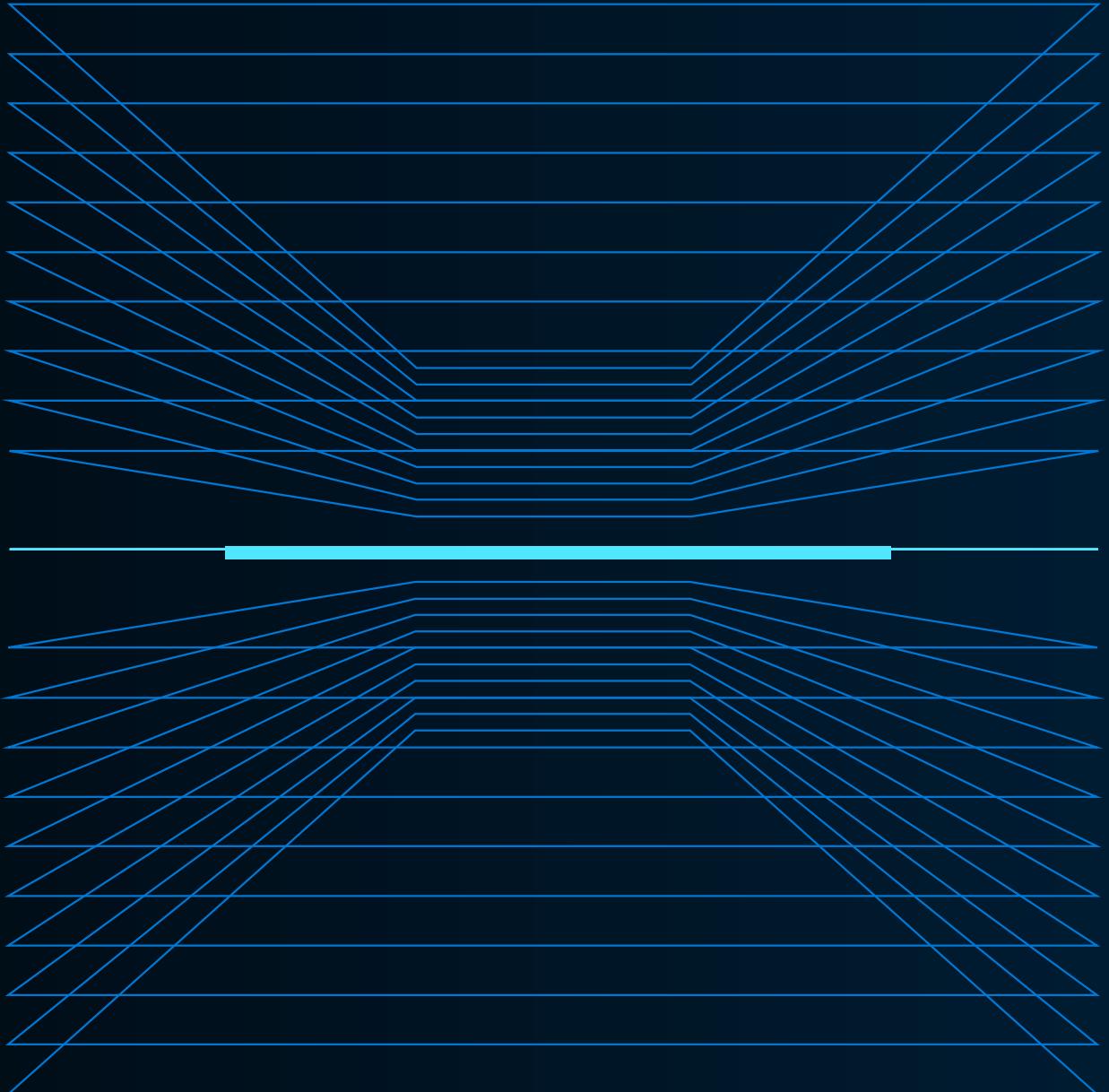


Conversational Language Understanding



Conversational Language Understanding with:



Michelle Sandford
Developer Engagement Lead
@Microsoft

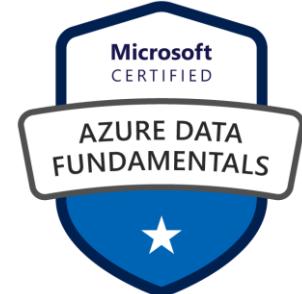


Joseph Stephen
Cloud Solution Architect
@Microsoft



This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.

<https://github.com/codess-aus>
<https://github.com/jcst0>



Why do we build AI

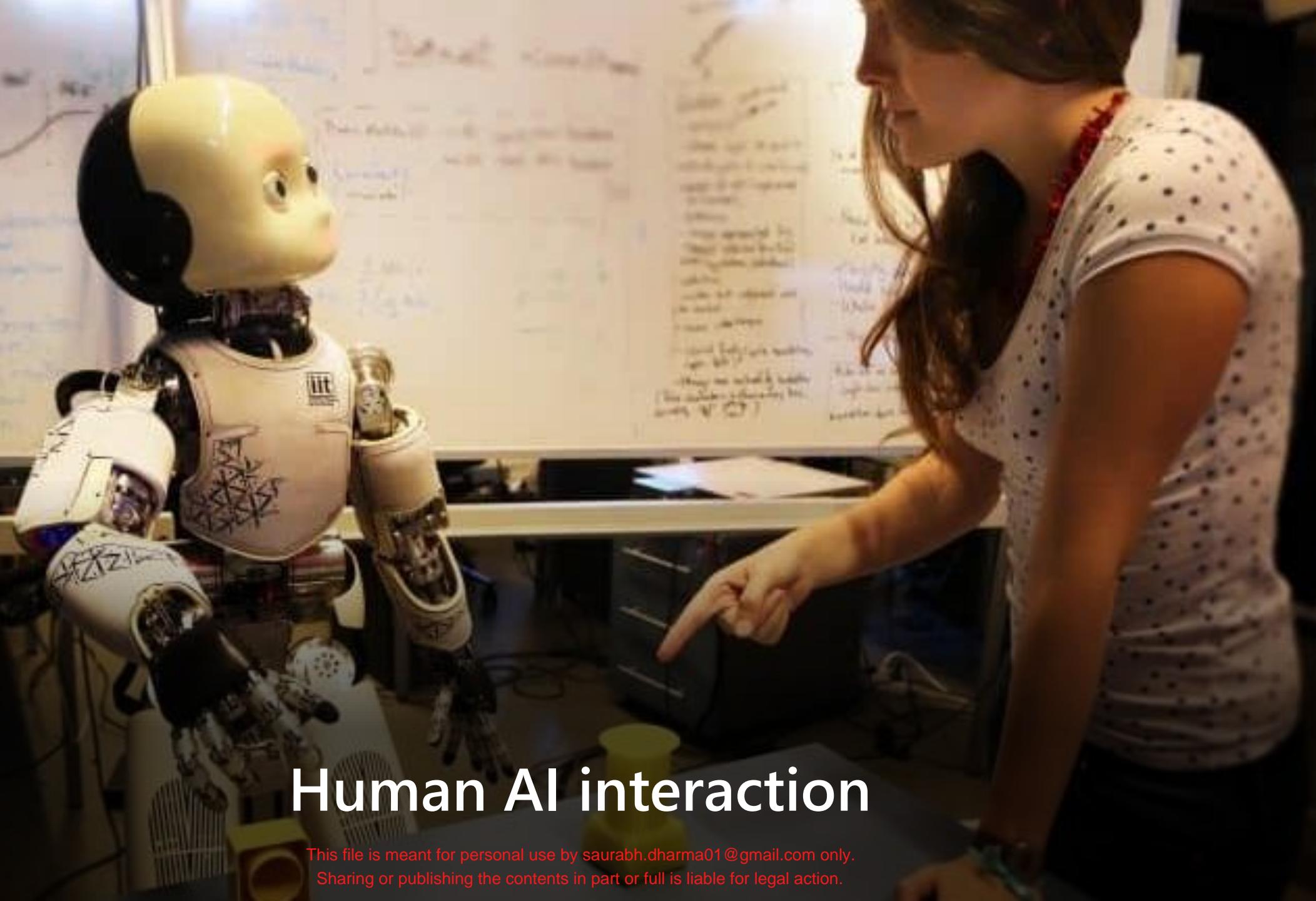
We instinctively seek to create new ideas and explore what it is to be human

We are bound by our physical capacity for memory and thought

We often cannot see the woods for the trees

We build AI to help us move forward...





Human AI interaction

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.

Agenda

I. Introduction to Microsoft Azure Conversational Language Understanding (CLU)

- Example usage scenarios
- Project Development Lifecycle
- Responsible AI
- Create a CLU Project (create, train, deploy, test) in Language Studio

II. CLU and Language Understanding Intelligence Service (LUIS)

- Differences between CLU and LUIS
- III. Creating a Conversational Bot using CLU
- Integrate conversational language understanding with Bot Framework
- Import a project in CLU (train and deploy)
- Update settings
- Identify Integration points
- Run the bot locally
- Test the bot

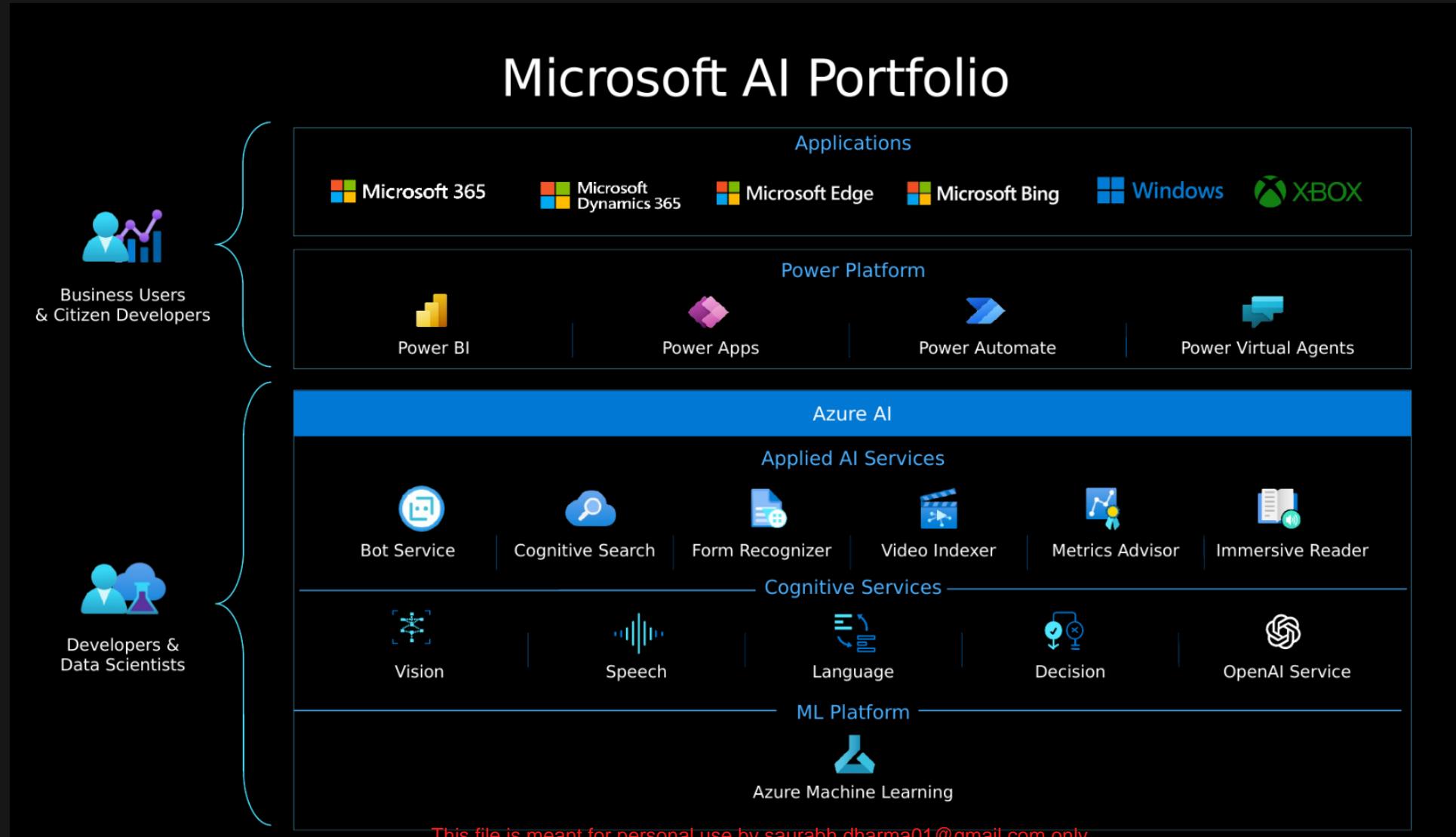
IV. Low Code/No Code Development with CLU

- Introduction to Low Code/No Code Development
- Advantages of using Low Code/No Code Development
- Create a FAQ bot
- Chat in web chat
- Enable bot in supported channels

VI. Conclusion

- Recap of key points
- Discussion of future developments
- Resources and next steps

Azure OpenAI's relationship to Azure AI Services



Azure OpenAI Studio

Cognitive Services | Azure OpenAI Studio - Preview

Azure OpenAI Studio

Privacy & cookies

Get started with Azure OpenAI

Perform a wide variety of natural language tasks with Azure OpenAI, including copywriting, summarization, parsing unstructured text, classification, and translation.

Explore examples for prompt completion



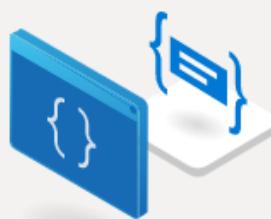
Summarize Text

Summarize text by adding a 'tl;dr' to the end of a text passage.



Classify Text

Classify items into categories provided at inference time.



Natural Language to SQL

Translate natural language to SQL queries.



Generate New Product Names

Create product names from examples words.

[Learn more](#)

[Learn more](#)

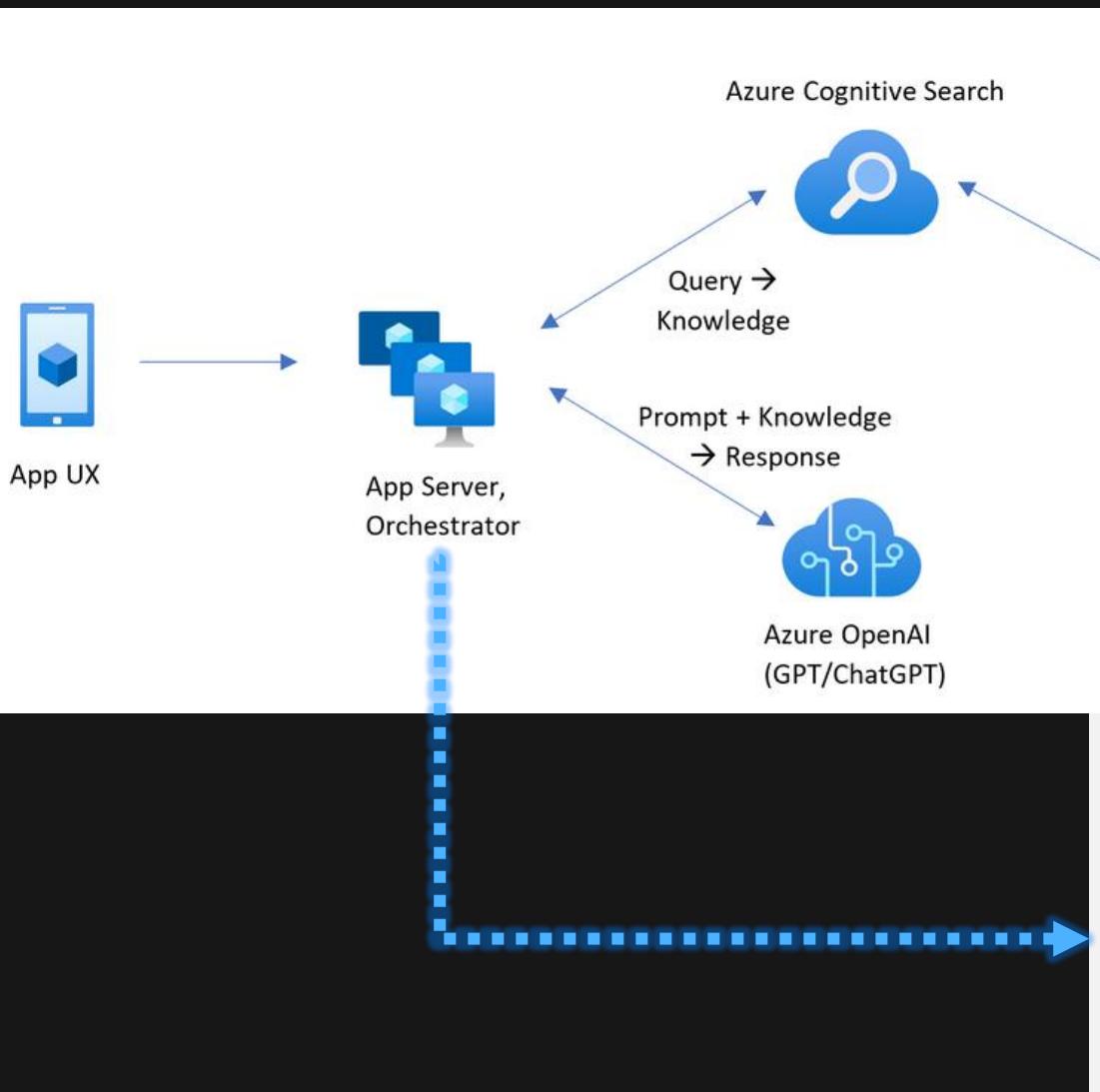
[Learn more](#)

[Learn more](#)

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Azure OpenAI + Cognitive Search



The screenshot shows the Azure OpenAI + Cognitive Search interface. At the top, there's a navigation bar with **Chat**, **Ask a question**, and a user icon. To the right is the title **Azure OpenAI + Cognitive Search**. Below the navigation bar, there are two purple decorative stars. The main area has a heading **Chat with your data** and a sub-instruction **Ask anything or try an example**. Three example questions are listed in boxes:

- What is included in my Northwind Health Plus plan that is not in standard?
- What happens in a performance review?
- What does a Product Manager do?

At the bottom, there's a text input field with placeholder text **Type a new question (e.g. does my plan cover annual eye exams?)** and a large blue **Ask** button with a right-pointing arrow.

Part 1

Introduction to Microsoft Azure Conversational Language Understanding (CLU)

What is conversational language understanding?

Intent

Top intent
BookFlight
Confidence: 91.80%

Entities

fromCity
New York
Confidence: 100.00%

toCity
London
Confidence: 100.00%

flightDate
December 1st
Confidence: 100.00%

Original text

I want to book a flight from New York to London on December 1st

fromCity toCity flightDate

Intent

Top intent
FlightBookingCLU
Type: Conversational Language
Confidence: 95.47%
FlightBookingCLU top intent: BookFlight

Entities

fromCity
London
Confidence: 100.00%

toCity
New York
Confidence: 100.00%

flightDate
June 8th
Confidence: 100.00%

Original text

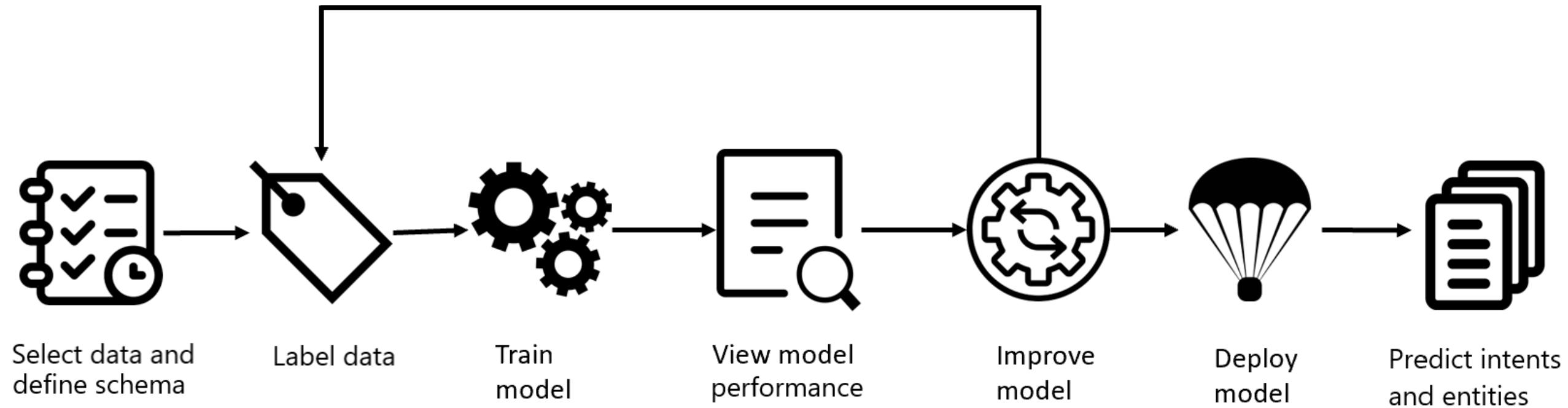
I need to book a flight from London to New York on June 8th

fromCity toCity flightDate

Example Usage Scenarios

- End-to-end conversational bot
- Human assistant bots
- Command and control application
- Enterprise chat bot

Project development lifecycle



Creating a CLU project typically involves several different steps.

Responsible Bots

1. Articulate the purpose of your bot and take special care if your bot will support consequential use cases.
2. Be transparent about the fact that you use bots as part of your product or service.
3. Ensure a seamless hand-off to a human where the human-bot exchange leads to interactions that exceed the bot's competence.
4. Design your bot so that it respects relevant cultural norms and guards against misuse.
5. Ensure your bot is reliable.
6. Ensure your bot treats people fairly.
7. Ensure your bot respects user privacy.
8. Ensure your bot handles data securely.
9. Ensure your bot is accessible.
10. Accept responsibility.

Put responsible AI into action

Most comprehensive responsible AI and data privacy standards



Building AI products responsibly



Apply responsible AI guidelines and standards throughout the software development lifecycle

Systematically test Cognitive Services for fairness and invest in diverse training data

Partner with experts in research to invent new solutions such as watermarking for synthetic audio content

Customers own and control their data

Providing tools for customers to use AI responsibly



Provide tools to help others understand, protect, and control their AI at every stage of innovation

Model explainability, interpretability and reproducibility capabilities

Responsible AI documentation & guidelines

Ensuring responsible use of AI



Limited access application process validates customers, scenario, and location

Active enrollment verification feature for Custom Neural Voice and Speaker Recognition protects end users

Content filtering and abuse detection built into the Azure OpenAI Service to help customers build safe high-quality applications

Develop AI products responsibly

Microsoft improves facial recognition technology to perform well across all skin tones, genders

June 26, 2018 | John Roach

[in](#) [tw](#) [f](#) [re](#) [g](#)



Responsible AI principles

Fairness



Reliability & Safety



Privacy & Security



Inclusiveness



Transparency



Accountability



Co-Designing Checklists to Understand Organizational Challenges and Opportunities around Fairness in AI

Michael Madan, Luke Stark, Jennifer Wotman Vaughan, Hanna Wallach
CHI Conference on Human Factors in Computing Systems | March 2020
Organized by ACM
CHI 2020 Best Paper Award

[Download BibTeX](#)

[Download PDF](#)

Groups

FATE: Fairness, Accountability, Transparency, and Ethics in AI
FATE | Montreal

Solving the challenge of securing AI and machine learning systems

Dec 6, 2019 | Valecia Maclin - General Manager, Engineering - Customer Security & Trust



Today, in collaboration with Harvard University's [Berkman Klein Center](#), we at Microsoft are publishing a series of materials we believe will contribute to solving a major challenge to securing artificial intelligence and machine learning systems. In short, there is no common terminology today to discuss security threats to these systems and methods to mitigate them, and we hope these new materials will provide baseline language that will enable the research community to better collaborate.

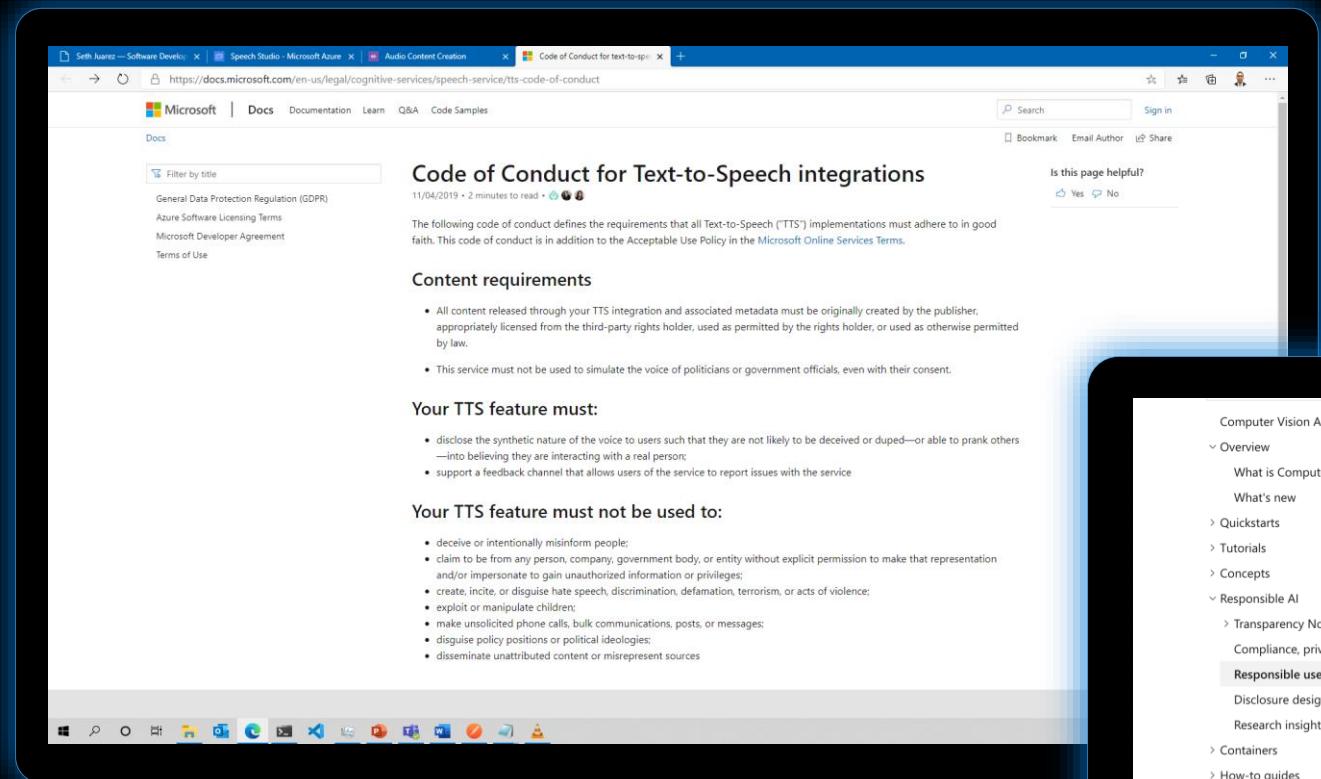
<https://www.microsoft.com/en-us/ai/responsible-ai>

This file is meant for personal use only. saurabh.dhankar.ai@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.



Empower responsible use



These recommendations are founded in the research insights and impact assessment conducted with building health and safety scenarios that our customers identified during their initial deployment. The recommendations are organized based around the key risks of harm identified during our impact assessment process including privacy, transparency through disclosure and accountability through effective human decision-making.

Application pre-development recommendations

We recommend developers start by conducting an impact assessment to understand the intended use, context and unintended or high risk uses to avoid. The impact assessment process will provide customers and deployers with the basis to prioritize the recommendations below.

RECOMMENDATIONS

Evaluate the benefits of short-term versus potential harms of long-term data collection by conducting an impact assessment of the system. One key factor of impact assessments is to understand the potential for harms. One approach for that is [harms modeling](#).

Obtain feedback from a diverse sampling of the community during the development and evaluation process (e.g., historically marginalized groups, people with disabilities, service workers). One approach to obtaining feedback from diverse perspectives is through a [Community Jury](#).

Establish feedback channels to collect questions and concerns from affected stakeholders. For example, feedback features built into app experiences, an easy-to-remember email address for feedback, anonymous feedback boxes placed in semi-private spaces, knowledgeable representatives in the lobby.

Recommendations for preserving privacy

Special consideration is required when using Spatial Analysis for public health and safety amidst a pandemic. In April 2020, Microsoft outlined [7 principles for preserving privacy](#) while addressing the challenges of responding to COVID-19. We recommend reviewing the [article explaining these principles](#) before you review the following recommendations. A successful privacy approach empowers individuals with information and provides controls and protection to preserve their privacy. Spatial Analysis collects data about individuals without identifying them. Even so, it is important to follow standard best

This file is meant for personal use by saurabh.dharma01@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

Sign in to Language Studio

Cognitive Services | Language Studio

Language Studio

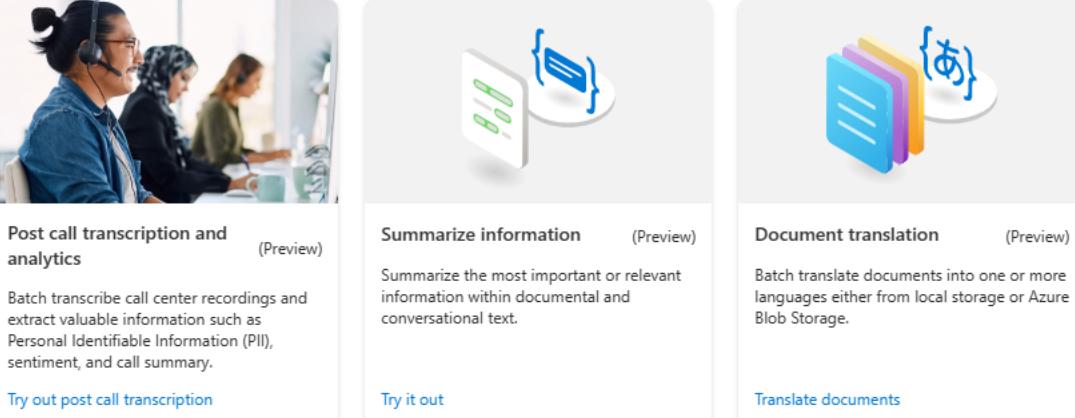
A Get started with Azure Cognitive Services for Language

Use our Natural Language Processing (NLP) features to analyze your textual data using state-of-the-art pre-configured AI models or customize your own models to fit your scenario.



☆ Featured Extract information Classify text Understand questions and conversational language Summarize text Translate text

Check out some of our newest featured capabilities that we are offering in the Language Studio.



Post call transcription and analytics (Preview)
Batch transcribe call center recordings and extract valuable information such as Personal Identifiable Information (PII), sentiment, and call summary.
[Try out post call transcription](#)

Summarize information (Preview)
Summarize the most important or relevant information within documental and conversational text.
[Try it out](#)

Document translation (Preview)
Batch translate documents into one or more languages either from local storage or Azure Blob Storage.
[Translate documents](#)

<https://language.cognitive.azure.com/>
This file is meant for personal use by Saurabh.Dharmatti@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Choose a language resource (or create one)

Instance detail	Required value
Azure subscription	Your Azure subscription.
Azure resource group	Your Azure resource group name.
Azure resource name	Your Azure resource name.
Location	One of the supported regions for your Language resource. For example "West US 2".
Pricing tier	One of the valid pricing tiers for your Language resource. You can use the Free (F0) tier to try the service.

Select an Azure resource X

To access Language studio, you need an Azure resource. You can use an existing resource or create a new one. You can change the resource you use at any time. [Learn more about resources in Azure](#).

Azure directory *

Default Directory

Note: Switching directory will cause the page to refresh.

Azure subscription *

Select an existing Azure subscription or [create a free account](#) and then refresh

Visual Studio Ultimate with MSDN

Resource type *

Language

Language or Azure Cognitive Services resources can be used for any capability except for translation, which requires a Translator resource

Resource name *

Select an existing resource or create a new one

Select your resource ↻

[Create a new Language resource in the Azure portal](#) ↗

Done Cancel

Create a language resource

The screenshot shows the Microsoft Azure portal interface. At the top, there's a blue header bar with the Microsoft Azure logo and a search bar. Below the header, the main content area has a dark background. On the left, there's a sidebar with navigation links like Home, Language service, and Microsoft. The main content area is titled "Language service" and includes sections for "Language service" (with a "Remove from Favorites" button), "Plan" (set to "Language service"), and "Overview". The "Overview" section contains a brief description of Azure Cognitive Service for Language and links for "Plans", "Usage Information + Support", and "Ratings + Reviews".

This screenshot shows the "Select additional features" step in the Azure portal. The title is "Select additional features" with a "Home > Language service >" breadcrumb. A note at the top states: "By default, Azure Cognitive Service for Language comes with several pre-built capabilities like sentiment analysis, key phrase extraction, pre-built question answering, etc. Some customizable features below require additional services like Azure Cognitive Search, Blob storage, etc. to be provisioned as well. Select the custom features you want to enable as part of your Language service." The interface is divided into two columns: "Default features" and "Custom features". The "Default features" column contains a list of checked items: Sentiment analysis, Key phrase extraction, Pre-built question answering, Conversational language understanding, Named entity recognition, Text Summarization, and Text analytics for Health. The "Custom features" column contains two items, both with checked boxes and "Select" buttons: "Custom question answering" (described as using Azure Cognitive Search) and "Custom text classification & Custom named entity recognition" (described as using Azure Storage). At the bottom, there's a "Continue to create your resource" button.

This file is meant for personal use by saurabh.dharma01@gmail.com only.
<https://portal.azure.com/>
Sharing or publishing the contents in part or full is liable for legal action.



Create a language resource

The screenshot shows the 'Create Language' page in the Microsoft Azure portal. At the top, there's a navigation bar with 'Microsoft Azure' and a search bar. Below it, the breadcrumb path is 'Home > Language service > Select additional features > Create Language'. The main area has tabs for 'Basics', 'Network', 'Identity', 'Tags', and 'Review + create', with 'Basics' selected. A descriptive text block says: 'Unlock insights from unstructured text using advanced natural language processing. Use sentiment analysis to find out what customers think of your brand. Find topic-relevant phrases using key phrase extraction and identify the language of the text with language detection. Detect and categorize entities in your text with named entity recognition.' Below this is a 'Learn more' link. The 'Project Details' section includes dropdowns for 'Subscription' (Visual Studio Ultimate with MSDN) and 'Resource group' (DeakinCLURG, with a 'Create new' option). The 'Instance Details' section includes dropdowns for 'Region' (Central India), 'Name' (DeakinCLU-Lang), and 'Pricing tier' (Free F0 (5K Transactions per 30 days)). At the bottom left is a link to 'View full pricing details'.

Responsible AI Notice

Microsoft provides technical documentation regarding the appropriate operation applicable to this Cognitive Service that is made available by Microsoft. Customer acknowledges and agrees that they have reviewed this documentation and will use this service in accordance with it.

[Responsible Use of AI documentation for Text Analytics for Health](#)

[Responsible Use of AI documentation for PII](#)

[Responsible Use of AI documentation for Language](#)

By checking this box I certify that I have reviewed and acknowledge the terms in the Responsible AI Notice. *



Create a conversational language understanding project

Cognitive Services | Language Studio

Language Studio

Welcome to Language Studio

Recent custom projects you've worked on

You need to select a resource to get started.

Featured Extract information

Check out some of our newest featured capabilities

Post call transcription and analytics (Preview)

Batch transcribe call center recordings and extract valuable information such as Personal Identifiable Information (PII), sentiment, and call summary.

Try out post call transcription

Learning resources

Select an Azure resource

To access Language studio, you need an Azure resource. You can use an existing resource or create a new one. You can change the resource you use at any time. [Learn more about resources in Azure](#).

Azure directory *

Default Directory

Note: Switching directory will cause the page to refresh.

Azure subscription *

Select an existing Azure subscription or [create a free account](#) and then refresh

Visual Studio Ultimate with MSDN

Resource type *

Language

Language or Azure Cognitive Services resources can be used for any capability except for translation, which requires a Translator resource

Resource name *

Select an existing resource or create a new one

DeakinCLU-Language

Pricing tier: Free (F0)

Managed identity: Enabled

Create a new Language resource

Done Cancel

Create a conversational language understanding project

Cognitive Services | Language Studio ?

Language Studio >

Understand questions and conversational language ^ Back to top

Customize your domain specific Conversational Language Understanding model to classify conversational utterances and extract detailed information from them. [Learn more about understanding conversational language](#)



Answer questions
Use the prebuilt question answering api to get answers to questions over unstructured text.

[Try it out](#)



Custom question answering
Customize the list of questions and answers extracted from your content corpus to provide a conversational experience that suits your needs.

[Open custom question answering](#)



Conversational Language Understanding
Build natural language into apps, bots, and IoT devices.

[Open Conversational Language Understanding](#)



Orchestration workflow
Connect and orchestrate CLU, Custom question answering & LUIS projects together in one single project

[Open Orchestration workflow](#)

Summarize text ^ Back to top

Use Natural Language Understanding (NLU) to summarize information from unstructured text. Use summarization tools to help you. [Learn more about summarization of text](#).



Create a conversational language understanding project

The screenshot shows the Microsoft Language Studio interface. At the top, there's a navigation bar with 'Cognitive Services' and 'Language Studio'. Below it, a breadcrumb trail says 'Language Studio > Conversational Language Understanding projects'. A main heading 'Select the project you want to work with' is followed by a descriptive text about conversational language understanding projects. Below this are buttons for 'Create new project', 'Import', 'Export', and 'Delete'. A central area is dimmed, indicating an import operation. A modal dialog box titled 'Import project' is open, containing fields for 'Choose a file (JSON format)' with a 'Choose File' button and the path 'EmailAppDemo.json', and 'Name' with the value 'DeakinCLUProject'. At the bottom of the dialog are 'Done' and 'Cancel' buttons. A large orange arrow points downwards from the 'Import' button on the main interface towards the 'Import project' dialog.

Create a conversational language understanding project

The screenshot shows the Azure Language Studio interface for a project named "DeakinCLUProject". The left sidebar lists various project components: Language Studio, Projects, DeakinCLUProject, Schema definition (selected), Data labeling, Training jobs, Model performance (Preview), Deploying a model, Testing deployments, and Project settings. The main content area is titled "Schema definition" and describes adding intents and entities. It shows a list of intents with their counts and associated entities:

Intent	Labeled utterances	Entities used with this intent
AddFlag	33	OrderReference, SenderName, Category, ContactName
AddMore	65	Attachment, Message, ContactName, OrderReference
Cancel	47	ContactName, RelationshipName
CheckMessages	45	Category, Time, Line, OrderReference
Confirm	21	ContactName
Delete	27	SenderName, Time, Line, PositionReference, OrderReference, Category, Date
Forward	32	ContactName, RelationshipName, Attachment, SenderName, Message, OrderReference, Time, Date
None	7	
QueryLastText	32	OrderReference, RelationshipName, ContactName, SenderName, Date, FromRelationshipName, Time
ReadAloud	81	Date, Category, OrderReference, EmailSubject, SenderName, FromRelationshipName, PositionReference, Line, Time
Reply	31	Message, ContactName, OrderReference, PositionReference, Line
SearchMessages	49	SenderId, SearchTexts, EmailSubject, FromRelationshipName
SendEmail	100	EmailSubject, ContactName, RelationshipName, Attachment, Message, Category, Date, Line, Time, SenderName

Train your model

Cognitive Services | Language Studio

» Language Studio > Conversational Language Understanding projects > EmailProject - Training jobs

Start a training job

Select Model

You can train a new model or overwrite an existing one. Training a new model is best at the beginning or for comparing between model performances. Overwriting a model will replace the old model with the new data.

You are currently using the latest 2022-05-01 training configuration version. Click here to change.

Train a new model

Overwrite an existing model

Training mode

Standard training (free)

Faster training times for quicker iterations. Only available in English. Free of charge.

Advanced training

Trains using fine-tuned neural network transformer models. Can train multilingual projects. [View pricing](#).

Data splitting

We use separate datasets to train your model and test its accuracy. [Learn more about data splitting](#).

Automatically split the testing set from training data

We'll select stratified samples from all training data according to the percentages that you provide here. Any data already assigned to the testing set will be ignored completely.

% for training

% for testing

Use a manual split of training and testing data

We'll use the training and testing sets that you've assigned in [Data Labeling](#) to create your custom model and measure its performance.

Your current split of data

100% training 0% testing

[View distribution of data](#)

Train your model

Cognitive Services | Language Studio

Language Studio > Conversational Language Understanding projects > DeakinCLUProject - Training jobs

Training jobs

After labeling your data, start a training job to create a model that understands conversational utterances. Select the trained model from a successful job to view its performance results. Jobs from the last [pricing for training](#)

+ Start a training job × Cancel

Training job id	Status	Output model	Submitted
d056df0d-7db1-4799-95fe-e578c97257...	Training succeeded	DeakinCLU	12/04/2023

Training job details

Training job ID
d056df0d-7db1-4799-95fe-e578c9725704_63816854400000000000

Submitted
12/04/2023, 4:46:35 pm

Total time
0 hours, 0 minutes, 59 seconds

Job status
Succeeded

Training mode
Standard training (free)

Training progress
Progress: 100% complete
Time elapsed: 0 hours, 0 minutes, 13 seconds

Evaluation progress
Progress: 100% complete
Time elapsed: 0 hours, 0 minutes, 43 seconds

Output model
[DeakinCLU](#)

Deploy your model

Cognitive Services | Language Studio

» Language Studio > Conversational Language Understanding projects > EmailApp - Deploying a model



Deploying a model

By creating a deployment, you make a trained model available for API calls in code or in [Testing deployments](#). After deploying, you'll get a prediction URL with [pricing for endpoint hosting and service requests](#)

Add deployment Get prediction URL Swap deployments Delete deployment

Deployment name	Model name	Deployed on
<input type="radio"/> deploy1	model1	7/24/2022

Deploy your model

Cognitive Services | Language Studio

Language Studio > Conversational Language Understanding projects > EmailApp - Deploying a model

Deploying a model

By creating a deployment, you make a trained model available for API calls in code or in [Testing deployments](#). After deploying, you'll get a prediction URL with sample URL requests to use as a starting point to call your model's endpoint. [Learn about pricing for endpoint hosting and service requests](#)

Add deployment Get prediction URL Swap deployments Delete deployment

Add deployment

Create or select an existing deployment name

You can create a new deployment name or overwrite an existing deployment name to add a trained model to them

Create a new deployment name

Overwrite an existing deployment name
By selecting an existing deployment name, you will override any deployed model to this deployment name

Assign trained model to your deployment name

Add a trained model to your selected deployment name

Model

Select a trained model

Deploy Cancel

Test deployed model

The screenshot shows the Microsoft Azure Language Studio interface, specifically the 'Testing deployments' section. The left sidebar lists project components: Language Studio, Projects, DeakinCLUProject (selected), Schema definition, Data labeling, Training jobs, Model performance (Preview), Deploying a model, Testing deployments (selected), and Project settings. The main content area has a breadcrumb trail: Language Studio > Conversational Language Understanding projects > DeakinCLUProject - Testing deployments. It includes a 'Run the test' button, language selection dropdowns for 'Select text language' (English (US)) and 'Deployment name' (DeakinCLUDeploy), and a text input field for entering or uploading a text document. The text 'Delete all emails from today' is entered. The results are displayed in JSON format under the 'Result' tab. The 'Intent' section shows the 'Top intent' as 'Delete' with a confidence of 96.56%. The 'Entities' section shows a single entity 'Date' with a value 'today' and a confidence of 100.00%. A 'Show entities' toggle switch is turned on. Below the results, the original text is shown again.

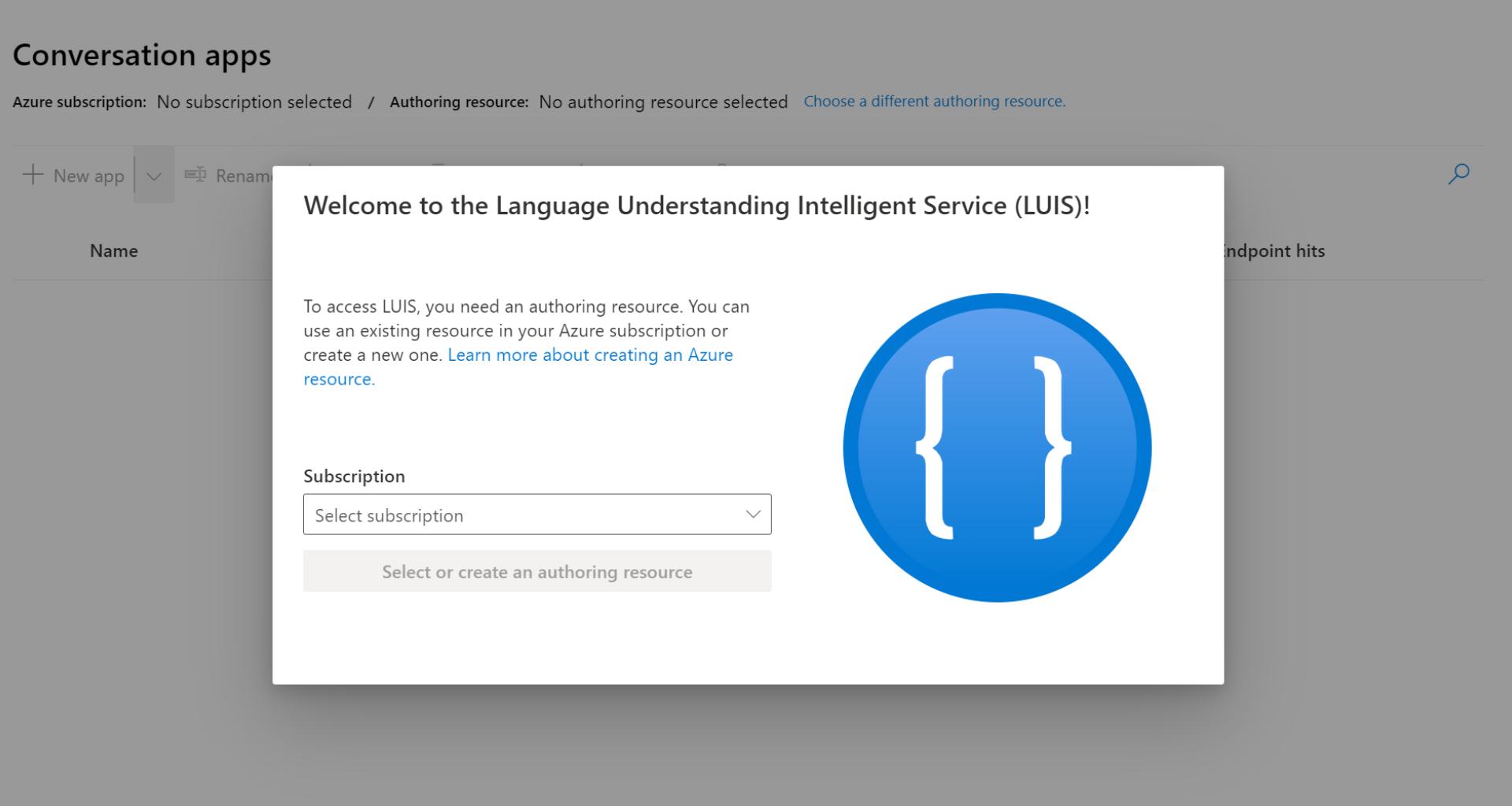
<https://language.cognitive.azure.com/>
This file is meant for personal use by Saurav Dhadialla at Microsoft only.
Sharing or publishing the contents in part or full is liable for legal action.



Part 2

CLU and Language Understanding Intelligence Service (LUIS)

CLU and Language Understanding Intelligence Service (LUIS)



The screenshot shows the Microsoft Azure portal's "Conversation apps" section. At the top, it displays "Azure subscription: No subscription selected / Authoring resource: No authoring resource selected" with a link to "Choose a different authoring resource". Below this, there are buttons for "+ New app" and "Rename". A search bar is also present. The main content area features a large, central blue circle containing two white curly braces {}, with the text "Welcome to the Language Understanding Intelligent Service (LUIS)!" above it. To the left, there is a "Name" input field and a "Subscription" dropdown set to "Select subscription", with a button below it labeled "Select or create an authoring resource". The background shows a blurred view of other Azure services like "Endpoint hits".

LUIS will be retired on October 1st 2025 and starting April 1st 2023 you will not be able to create new LUIS resources.

This file is meant for personal use by saurabh.dharma01@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

CLU offers the following advantages over LUIS

- Improved accuracy with state-of-the-art machine learning models for better intent classification and entity extraction.
- Multilingual support for model learning and training
- Ease of integration with different CLU and [custom question answering](#) projects using [orchestration workflow](#)
- The ability to add testing data within the experience using Language Studio and APIs for model performance evaluation prior to deployment.

LUIS will be retired on October 1st 2025 and starting April 1st 2023 you will not be able to create new LUIS resources.

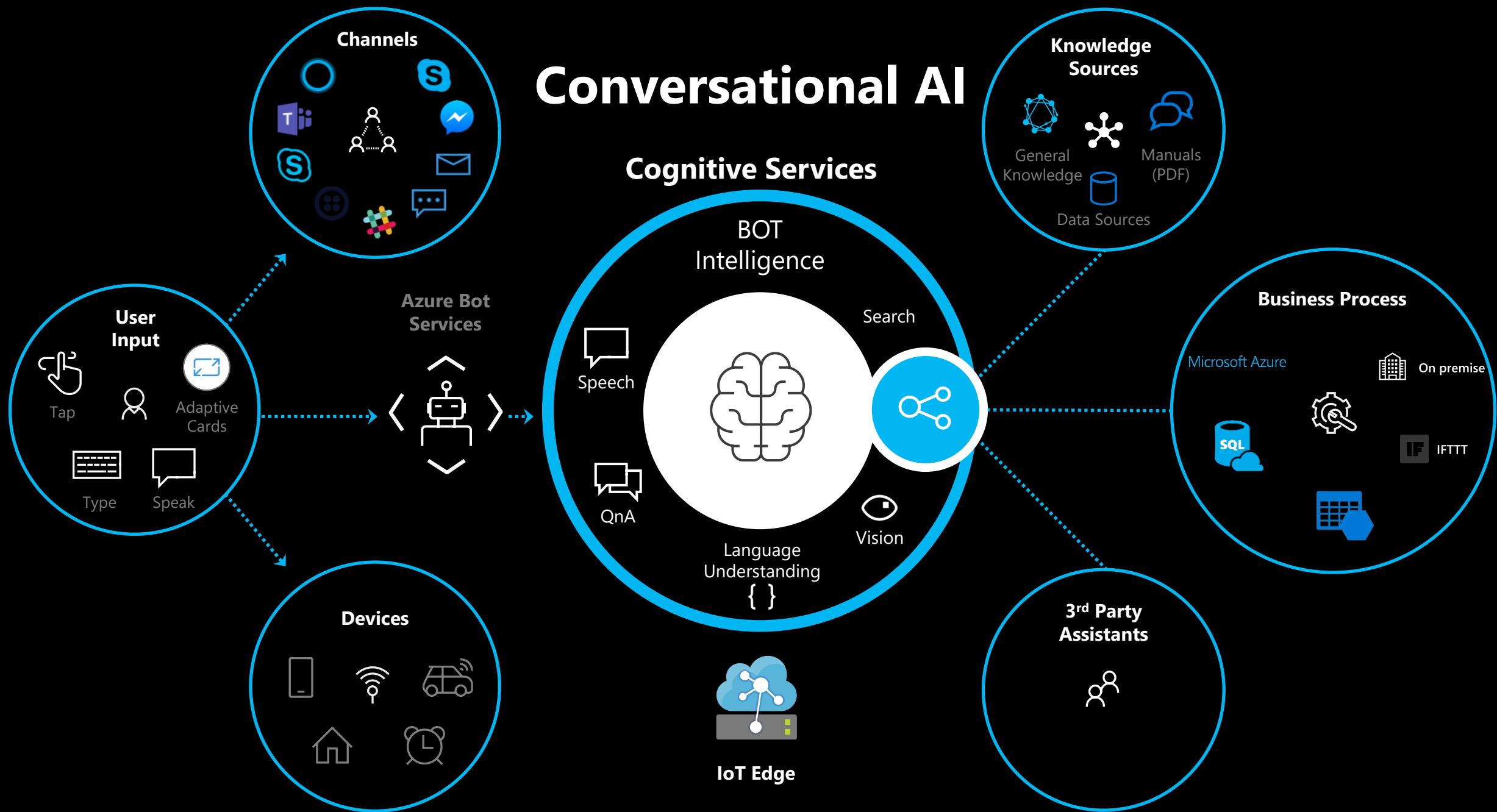
This file is meant for personal use by saurabh.dharma01@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

Part 3

Creating a Conversational Bot using CLU

Conversational AI



This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Creating a Conversational Bot using CLU

Language Studio > Conversational Language Understanding projects

Select the project you want to work with

A conversational language understanding project contains both labeled data as well as unlabeled data. You can use this data to train your bot to categorize into intents.

 Create new project  Import  Export  Delete

Train the Model

The screenshot shows the Microsoft Cognitive Services Language Studio interface. The top navigation bar includes 'Cognitive Services' and 'Language Studio'. The breadcrumb path shows 'Language Studio > Conversational Language Understanding projects > EmailProject - Training jobs'. On the left, there's a sidebar with various icons and a main content area titled 'Start a training job'. The 'Select Model' section allows training a new model or overwriting an existing one. The 'Training mode' section offers standard training (free) or advanced training. The 'Data splitting' section lets users automatically split the testing set from training data (selected) or use a manual split. A note says 'Your current split of data' with '100% training 0% testing' and a link to 'View distribution of data'.

Cognitive Services | Language Studio

» Language Studio > Conversational Language Understanding projects > EmailProject - Training jobs

Start a training job

Select Model

You can train a new model or overwrite an existing one. Training a new model is best at the beginning or for comparing between model performances. Overwriting a model will replace the old model with the new data.

You are currently using the latest 2022-05-01 training configuration version. [Click here to change.](#)

Train a new model

Overwrite an existing model

Training mode

Standard training (free)
 Advanced training

Faster training times for quicker iterations. Only available in English. Free of charge.
Trains using fine-tuned neural network transformer models. Can train multilingual projects. [View pricing](#).

Data splitting

We use separate datasets to train your model and test its accuracy. [Learn more about data splitting](#).

Automatically split the testing set from training data

We'll select stratified samples from all training data according to the percentages that you provide here. Any data already assigned to the testing set will be ignored completely.

80 % for training
20 % for testing

Use a manual split of training and testing data

We'll use the training and testing sets that you've assigned in [Data Labeling](#) to create your custom model and measure its performance.

Your current split of data
100% training 0% testing
[View distribution of data](#)

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Deploy the Model

Add deployment

X

Create or select an existing deployment name

You can create a new deployment name or override an existing deployment name to add a trained model to them

- Create a new deployment name

Testing

- Override an existing deployment name

By selecting an existing deployment name, you will override any deployed model to this deployment name

Assign trained model to your deployment name

Add a trained model to your selected deployment name

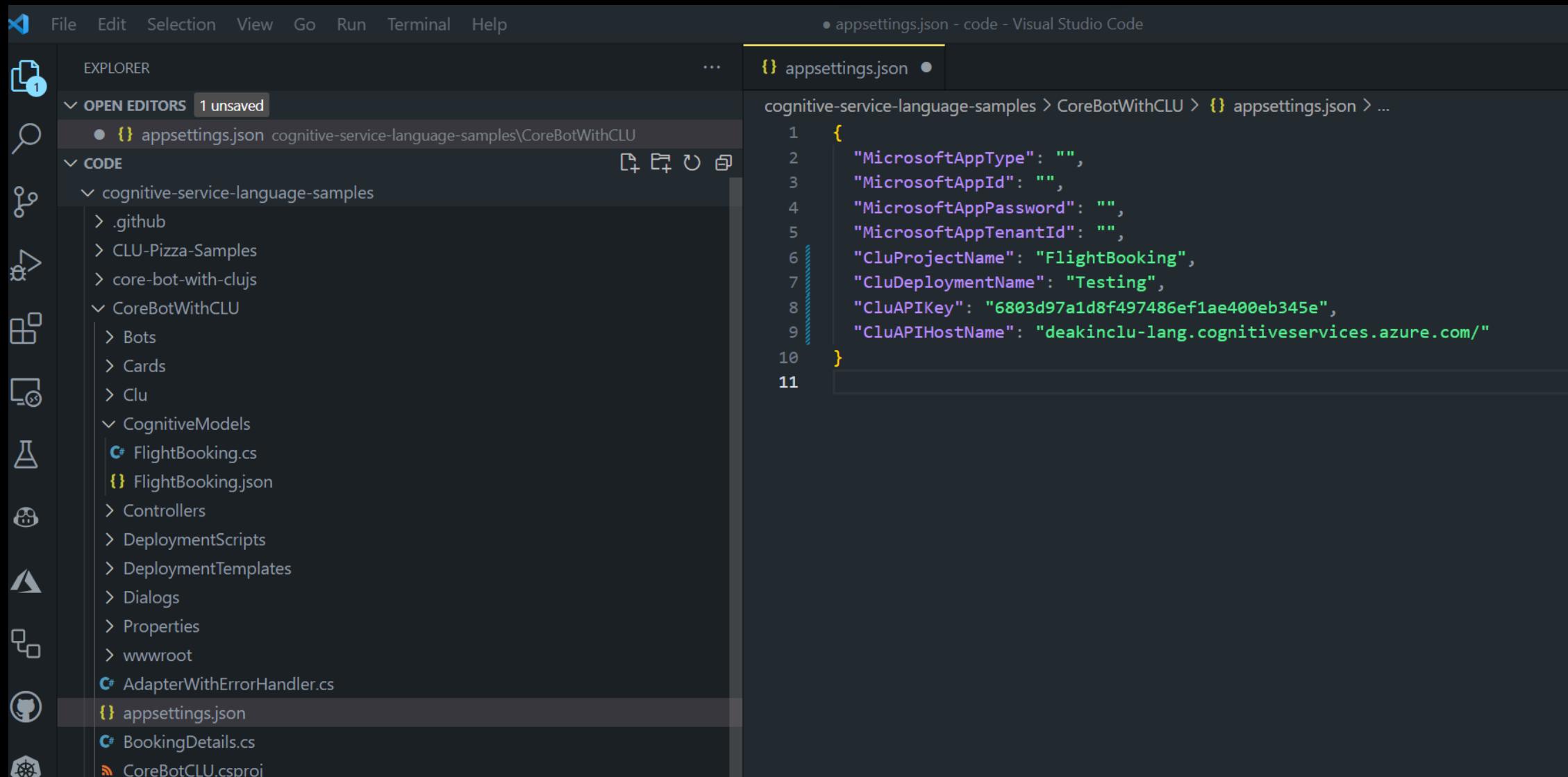
Model

v1

Submit

Cancel

Update the Settings File



The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Explorer:** Shows the project structure under "CODE".
 - cognitive-service-language-samples
 - .github
 - CLU-Pizza-Samples
 - core-bot-with-clujs
 - CoreBotWithCLU
 - Bots
 - Cards
 - Clu
 - CognitiveModels
 - FlightBooking.cs
 - FlightBooking.json
 - Controllers
 - DeploymentScripts
 - DeploymentTemplates
 - Dialogs
 - Properties
 - wwwroot
 - AdapterWithErrorHandler.cs
 - appsettings.json
 - BookingDetails.cs
 - CoreBotCLU.csproj
- Editor:** The "appsettings.json" file is open in the main editor area.

```
1 {  
2     "MicrosoftAppType": "",  
3     "MicrosoftAppId": "",  
4     "MicrosoftAppPassword": "",  
5     "MicrosoftAppTenantId": "",  
6     "CluProjectName": "FlightBooking",  
7     "CluDeploymentName": "Testing",  
8     "CluAPIKey": "6803d97a1d8f497486ef1ae400eb345e",  
9     "CluAPIHostName": "deakinclu-lang.cognitiveservices.azure.com/"  
10 }  
11
```

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.

Keys and Endpoint

Cognitive Services | Language Studio

Language Studio > Conversational Language Understanding projects > FlightBooking - Project settings

FlightBooking

Project description
CLU Model for CoreBot

None score threshold (Experimental- [Give us feedback](#))

Value
0

Language

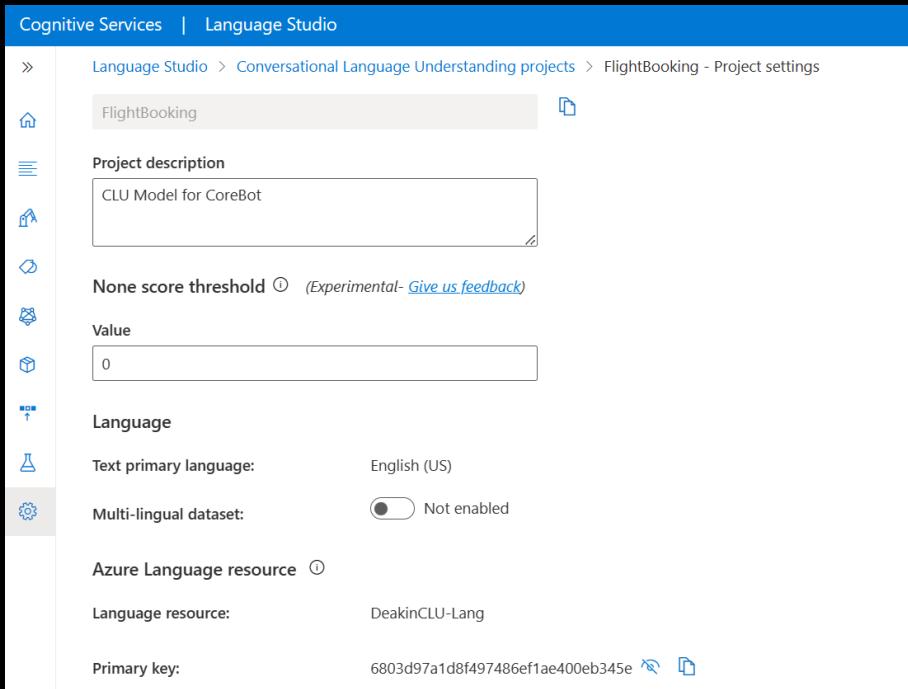
Text primary language: English (US)

Multi-lingual dataset: Not enabled

Azure Language resource

Language resource: DeakinCLU-Lang

Primary key: 6803d97a1d8f497486ef1ae400eb345e



Microsoft Azure

Home > All resources > DeakinCLU-Lang

All resources

Default Directory (codesswaoutlook.onmicrosoft.com)

+ Create Manage view ...

Filter for any field...

Name ↑

- aq42b630fe61c740ad8d2d4d
- ASP-BasicBotRG-b947
- AzureBlack
- codesswa
- cs110032000c7592091
- DarkRobot
- darkside
- DeakinCLU-Lang
- DeepThought
- DeepThought-ionq
- Empire
- ewok
- ewok

Resource Management

- Features
- Keys and Endpoint
- Encryption
- Pricing tier
- Networking
- Identity
- Cost analysis
- Properties
- Locks

DeakinCLU-Lang | Keys and Endpoint

Language

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Regenerate Key1 Regenerate Key2

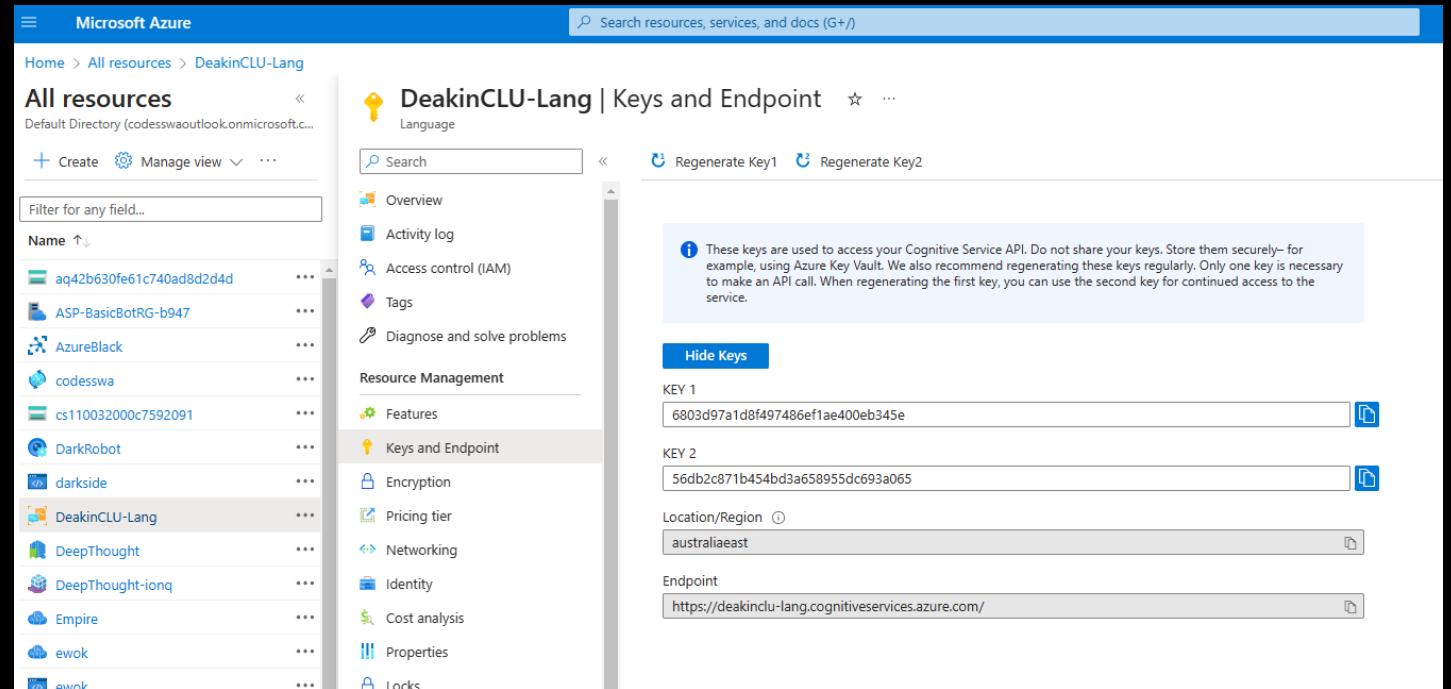
Hide Keys

KEY 1
6803d97a1d8f497486ef1ae400eb345e

KEY 2
56db2c871b454bd3a658955dc693a065

Location/Region
australiaeast

Endpoint
<https://deakinclu-lang.cognitiveservices.azure.com/>



Run the bot locally

Run the bot from a terminal

From a terminal, navigate to the *cognitive-service-language-samples/CoreBotWithCLU* folder.

Then run the following command

Bash

 Copy

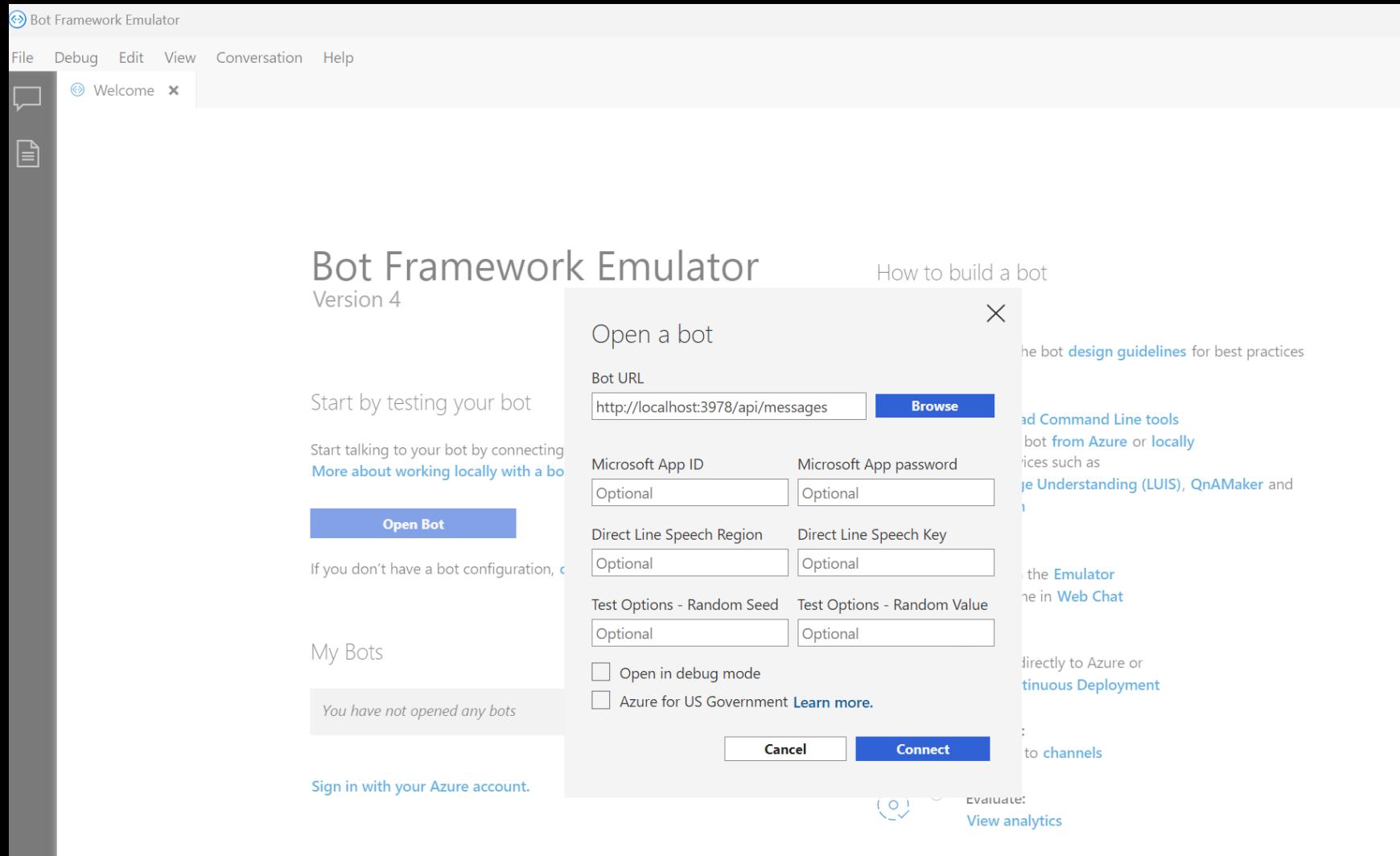
```
# run the bot  
dotnet run
```

```
SOUTHPACIFIC+misandf0@LAPTOP-1717A50L MINGW64 /c/code/cognitive-service-language-samples/CoreBotWithCLU (main)  
$ dotnet run  
info: Microsoft.Hosting.Lifetime[0]  
      Now listening on: http://localhost:3978  
info: Microsoft.Hosting.Lifetime[0]  
      Application started. Press Ctrl+C to shut down.  
info: Microsoft.Hosting.Lifetime[0]  
      Hosting environment: Development  
info: Microsoft.Hosting.Lifetime[0]  
      Content root path: C:\code\cognitive-service-language-samples\CoreBotWithCLU
```

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Testing the bot using Bot Framework Emulator



This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Testing the bot using Bot Framework Emulator

The screenshot shows the Bot Framework Emulator application window. The main area displays a blue circular icon with a white 'L' shape and two dots, followed by the text "Welcome to Bot Framework!". Below this, there are three buttons: "Get an overview", "Ask a question", and "Learn how to deploy". A message input field at the bottom says, "What can I help you with today? Say something like... Book a flight from Paris to Berlin on April 20, 2023". On the right side, a log panel shows the following entries:

```
[15:19:16] Connecting to bot on http://localhost:3978/api/messages
[15:19:16] Emulator listening on http://[:]:64362
[15:19:16] ngrok not configured (only needed when connecting to remotely hosted bots)
[15:19:16] Connecting to bots hosted remotely
[15:19:16] Edit ngrok settings
[15:19:16] -> conversationUpdate
[15:19:17] <- message application/vnd.microsoft.card.adaptive
[15:19:17] <- message What can I help you with today? Say something like...
[15:19:17] <- trace Bot State
[15:19:17] POST 200 directline/conversations/<conversationId>/activities
```

At the bottom of the slide, a red watermark reads: "This file is meant for personal use by saurabh.dharma01@gmail.com only. Sharing or publishing the contents in part or full is liable for legal action."

Testing the bot using Bot Framework Emulator

The screenshot shows the Bot Framework Emulator interface. On the left, there's a sidebar with icons for notifications, settings, and a transcript. The main area has a header with 'File', 'Debug', 'Edit', 'View', 'Conversation', and 'Help' menus, and tabs for 'Welcome' and 'Live Chat'. Below the header, there are buttons for 'Restart Conversation - New User ID' and 'Save transcript'. The conversation log shows the following messages:

- User: What else can I do for you?
- Bot: book a flight from australia to India
Just now
- User: When would you like to travel?
- Bot: 1st July 2023
Just now
- User: Please confirm, I have you traveling to: India from: australia on: 2023-07-01. Is this correct?
- Bot: Yes
Just now
- User: I have you booked to India from australia on 1st July 2023
- Bot: What else can I do for you?

At the bottom, there's a text input field with 'Type your message' placeholder and a send button icon. A red watermark at the bottom center reads: 'This file is meant for personal use by saurabh.dharma.201@gmail.com only.' and 'Sharing or publishing the contents in part or full is liable for legal action.'

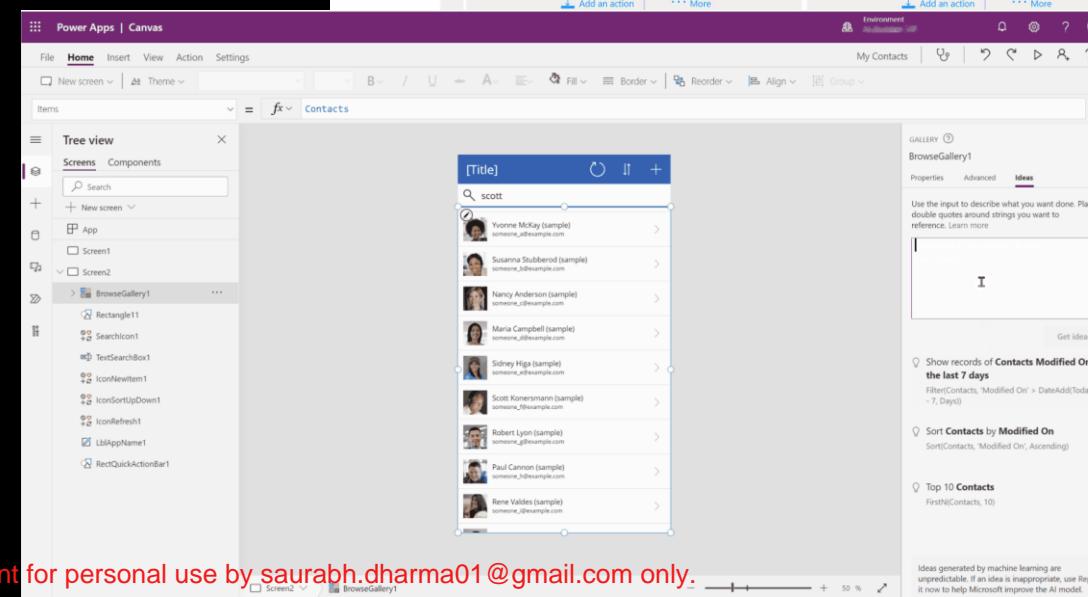
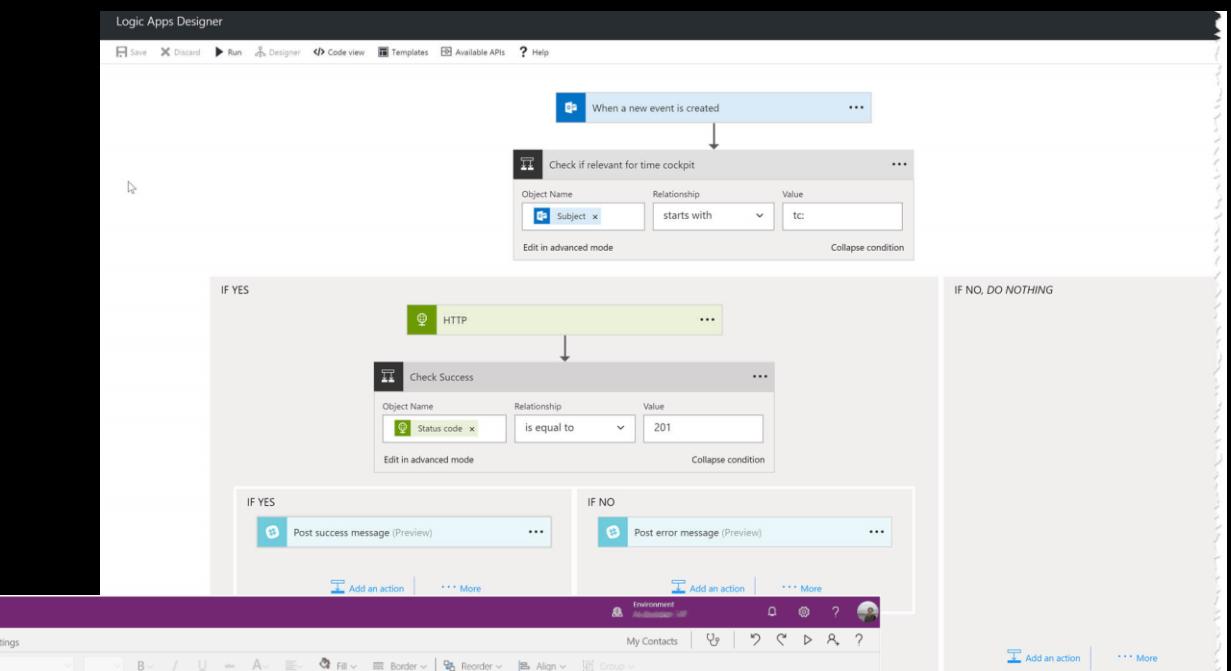
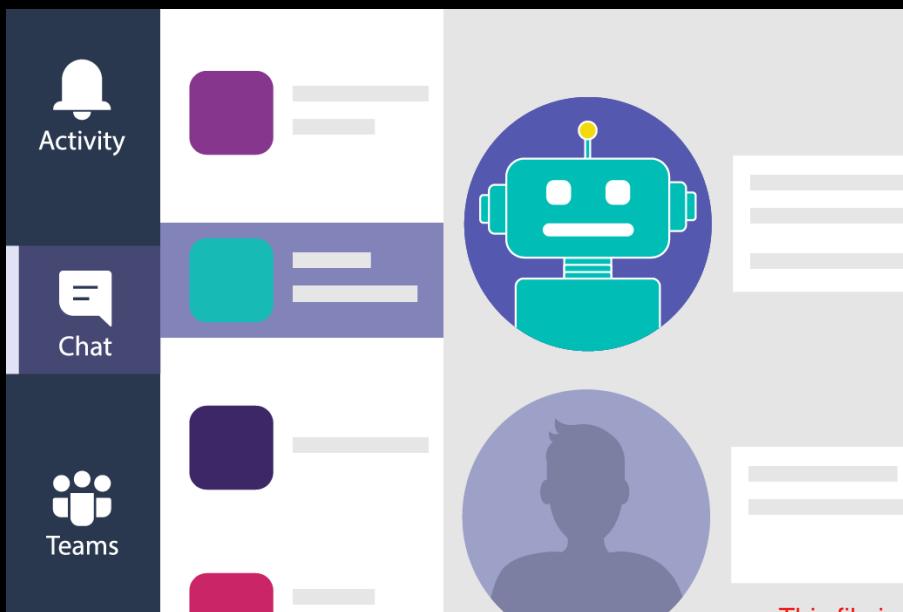
On the right side, there's a panel titled 'Click on a log item in the panel below to inspect activity.' It contains the following log entries:

```
[15:22:29] POST 200 directline/conversations/<conversationId>/activities
[15:22:37] -> message 1st July 2022
[15:22:44] <- message Please confirm, I have you traveling to: India fro...
[15:22:44] <- trace Bot State
[15:22:44] POST 200 directline/conversations/<conversationId>/activities
[15:22:49] -> message No
[15:22:49] <- message What else can I do for you?
[15:22:49] <- trace Bot State
[15:22:49] POST 200 directline/conversations/<conversationId>/activities
[15:23:04] -> message book a flight from australia to India
[15:23:05] <- trace CLU Trace
[15:23:05] <- message When would you like to travel?
[15:23:05] <- trace Bot State
[15:23:05] POST 200 directline/conversations/<conversationId>/activities
[15:23:10] -> message 1st July 2023
[15:23:10] <- message Please confirm, I have you traveling to: India fro...
[15:23:10] <- trace Bot State
[15:23:10] POST 200 directline/conversations/<conversationId>/activities
[15:23:14] -> message Yes
[15:23:14] <- message I have you booked to India from australia on 1st J...
[15:23:14] <- message What else can I do for you?
[15:23:14] <- trace Bot State
```

Part 4

Low Code/No Code Development with CLU

What is Low Code / No Code Development?



The screenshot shows the Microsoft Power Apps Canvas interface. On the left, the "Tree view" pane shows a hierarchy of screens and components. The main area displays a "Gallery" view titled "BrowseGallery1" showing a list of contacts. To the right, the "Logic App" pane shows a logic app with steps for filtering contacts by modified date and sorting them by modified on.

This file is meant for personal use by saurabh.dharma01@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

What is Low Code / No Code Development?

Power Virtual Agents

Channels

Configure your bot channels to meet your customers where they are. [Learn more](#)

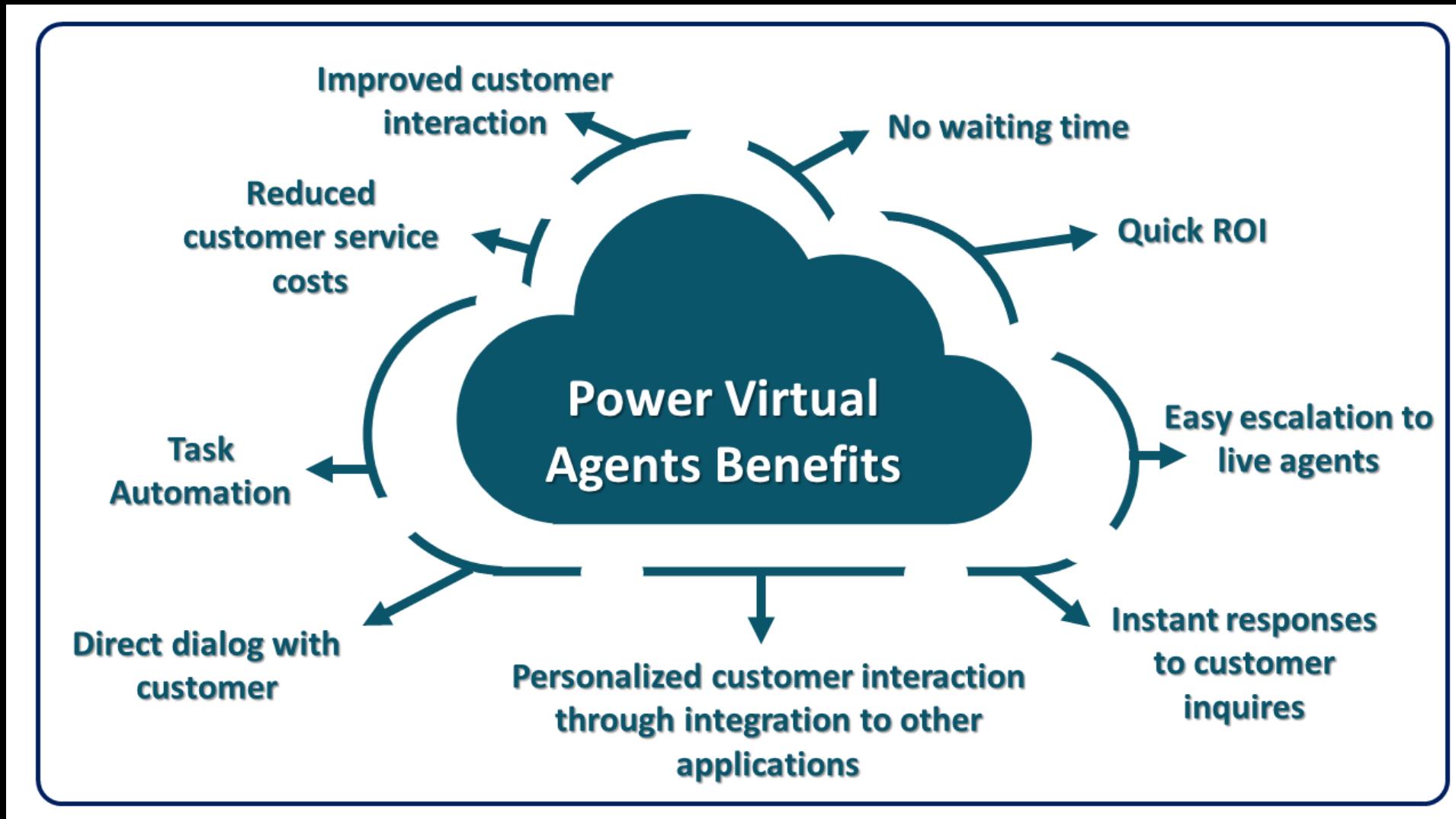
Demo website	Custom website	Mobile app	Facebook
Microsoft Teams	Skype	Cortana	Slack
Telegram	Twilio	LINE	kik

Test chat

This file is meant for personal use by saurabh.dharma01@gmail.com only.
<https://web.poweruya.microsoft.com/>
Sharing or publishing the contents in part or full is liable for legal action.



What is Low Code / No Code Development?



Advantages of Low Code / No Code Platforms

1. Faster development time
2. Cost-Effective Solutions
3. Increased collaboration
4. Better empower your teams
5. Improve customer satisfaction

Build low code chat bots

Cognitive Services | Language Studio

Language Studio

A Get started with Azure Cognitive Services for Language

Use our Natural Language Processing (NLP) features to analyze your textual data using state-of-the-art pre-configured AI models or customize your own models to fit your scenario.



☆ Featured Extract information Classify text **Understand questions and conversational language** Summarize text Translate text

Retrieve the most appropriate answer to questions using question answering (CQA) or classify intents and extract entities for conversational utterances using conversational language understanding (CLU). Use orchestration workflow to create one project that routes queries between multiple CQA and CLU projects. [Learn more about understanding conversational language.](#)



Answer questions
Use the prebuilt question answering API to get answers to questions over unstructured text.

[Try it out](#)



Custom question answering
Next generation of QnAMaker
Customize the list of questions and answers extracted from your content corpus to provide a conversational experience that suits your needs.

[Open Custom question answering](#)



Conversational language understanding
Next generation of LUIS
Classify utterances into intents and extract information with entities to build natural language into apps, bots, and IoT devices.

[Open Conversational language understanding](#)



Orchestration workflow
Connect and orchestrate CLU, Custom question answering & LUIS projects together in one single project.

[Open Orchestration workflow](#)

Learning resources

Read the documentation
Interpret natural language, classify documents, get real-time translations, or integrate language into your bot experiences.

[Language documentation](#)

Explore our code samples
Explore our samples and discover the things you can build with Language services.

[Code samples](#)

Watch a video (coming soon)
Understand language and infuse intelligence in your apps with Language APIs.

[Video tutorials](#)

Microsoft Learn (coming soon)
Discover new skills, find certifications, and advance your career in minutes with interactive, hands-on learning paths.

[Microsoft Learn](#)

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.

Create your first question answering project

Answer questions

Provide answers to questions being asked from your unstructured texts using our prebuilt capabilities or choose to customize your domain specific question and answer pairs over data you provide. [Learn more about questions answering](#)

Answer questions



Provide answers to question being asked from unstructured text.

[Try it out](#)

Custom question answering



Customize conversational question and answer layer over your data.

[Open custom question answering](#)

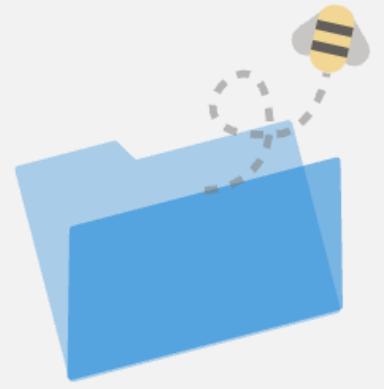
Create your first question answering project

Cognitive Services | Language Studio

Language studio > Custom question answering

Custom question answering

+ Create new project Export Import Delete



Start by connecting Azure search to the language resource

To create a custom question answering project and add data sources to it, you would need to link an Azure search resource to the language resource. [Connect to Azure search.](#)

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.

Create your first question answering project

Create a project

X

- Choose language setting
- Enter basic information
- Review and finish

Choose language setting for resource DeakinCLU-Lang.

Permanently set whether or not you can create projects in multiple languages using your Azure resource DeakinCLU-Lang. [Learn more about projects in multiple languages and pricing.](#)

How do you want to select the language for projects in this resource?* ⓘ

I want to select the language when I create a project in this resource
When creating a project in this resource you will be able to select what language the data is in. Selecting this option will incur more costs. [Learn more about pricing](#)

I want to set the language for all projects created in this resource
All projects created in this resource will always use the same language for the data.

Select the language for all projects* ⓘ

English

▼

Create your first question answering project

Create a project X

Enter basic information Review and finish

Enter the basic information for your custom question answering knowledge base such as name and description.

Language resource
DeakinCLU-Lang ▼
To change your resource go to [Settings](#)

Azure search resource
deakinsearch ▼
To change your resource go to [Azure Search](#)

Name *

Description

Source language * ⓘ
English ▼

Default answer when no answer is returned * ⓘ

Back Next Create project Cancel

Create your first question answering project

Create a project X

<ul style="list-style-type: none"><input checked="" type="checkbox"/> Enter basic information<input type="checkbox"/> Review and finish	<p>Review the configurations you set for your project in the previous steps.</p> <p>Projects in multiple languages allowed? No</p> <p>Language resource DeakinCLU-Lang</p> <p>Azure Search resource deakinsearch</p> <p>Project name DeakinQuestion</p> <p>Description --</p> <p>Source language English</p> <p>Default answer when no response is returned No answer found</p> <p style="text-align: right;">Back Next Create project Cancel</p>
--	---

Create your first question answering project

The screenshot shows the Microsoft Language Studio interface. At the top, there's a navigation bar with 'Cognitive Services' and 'Language Studio'. On the left, a sidebar has icons for Home, Manage sources, FAQ, Classify file structure, and Settings. The main area has a title 'Manage sources' and a sub-section 'Add data sources to your project'. It explains how to add FAQs, manuals, and structured sources or unstructured content. Below this is a 'Skip all' and 'Got it' button. A modal window titled 'Add URLs' is open in the foreground, explaining that up to 10 URLs can be added at once. It includes buttons for '+ Add url', 'Edit', and 'Delete'. Below these are columns for 'URL name', 'URL', and 'Classify file structure'. A message 'No items found.' is displayed. The background shows a blurred version of the 'Manage sources' page.

Create your first question answering project

The screenshot shows the Microsoft Language Studio interface for creating a question answering project. The top navigation bar includes 'Cognitive Services | Language Studio', a bell icon, a smiley face, a gear, and a question mark.

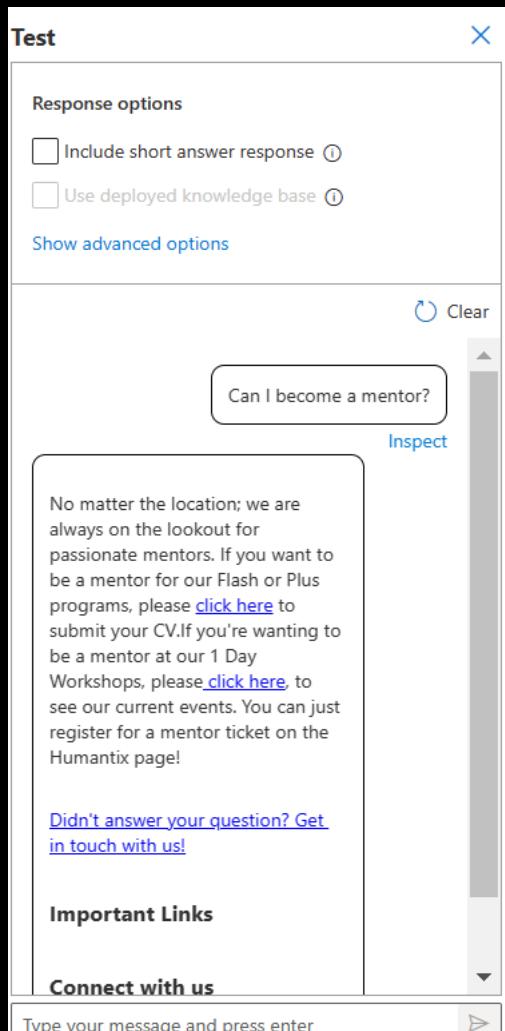
The left sidebar contains icons for Home, Question answer pairs (12), Synonyms (0), Add (+), Delete (trash), Copy (copy), Paste (paste), Refresh (refresh), and a search bar labeled 'Search pairs'. Below this, there's a 'Sources' section with 'SheCodes' selected and a 'Clear all' button. The main content area is titled 'Edit knowledge base' and shows '0 unstructured sources and 1 structured sources'. A 'View sources' link is available. On the right, there's a toggle switch labeled 'Enable'.

The 'FAQs' section lists items under 'Source: https://shecodes.com.au/frequently-asked-questions/'. The items include:

- FAQs (selected, 7 answers)
- Our definition of women? (1 answer)
- Do I need my own laptop? (1 answer)
- How can I get into mentoring if there isn't a program on? (0 answers)

Each FAQ item has a 'Edit answer' link next to it. The 'Our definition of women?' item also has a 'Follow up prompts' link.

Create your first question answering project



This screenshot shows a more detailed view of the Microsoft QnA Maker 'Test' interface for the same question. It includes the same response options and advanced options. The response card is identical to the one in the first screenshot. To the right of the card, a 'Question' section shows the question 'Can I become a mentor?'. Below it is a 'Top answers' section with the instruction 'Select the most appropriate answer:' followed by a checkbox for 'Save this query as alternate question for this answer'. On the far right, there are sections for 'Answer' (containing the same text as the response card) and 'Edit question answer pair'. At the bottom, there are sections for 'Important Links', 'Connect with us', 'Confidence score: 0.72', 'See additional information', and another 'Answer' section with an 'Edit question answer pair' link.

Create your first question answering project

The screenshot shows the Microsoft Language Studio interface. At the top, there's a blue header bar with 'Cognitive Services' and 'Language Studio' tabs. Below the header, a breadcrumb navigation shows 'Language studio > Custom Question Answering Projects > Sample-project - Edit knowledge base'. On the left, there's a vertical sidebar with icons for Home, Sources, and Questions. The main content area is titled 'Edit questions in Sample-project' and displays a message '0 structured sources, 0 unstructured sources.' with a 'View sources' link. Below this, there's a toolbar with buttons for 'Deploy knowledge base' (which has a red box around its icon), 'Question pair', 'Save changes', 'Edit', 'Test', 'Delete', 'Show columns', and 'Edit'. A 'Filtered by' dropdown at the bottom shows 'Sources: https://download.microsoft.com/' with a 'Clear all' link. A red box highlights the 'Deploy knowledge base' button.

Create your first question answering project

Cognitive Services | Language Studio

» Language Studio > Custom question answering > DeakinQuestion - Deploy knowledge base

Deploy knowledge base

Deploy knowledge base and create a bot in a few clicks.

Deploy Get prediction URL

Your knowledge base is now deployed. You can get your prediction URL or create a bot.

Knowledge base status	
State:	Deployed
Deployment Date:	4/14/2023
Deployment Time:	1:53:26 PM
Resource:	DeakinCLU-Lang
Location:	australiaeast
Tier:	Free (F0)

Next steps: Create a bot

Step 1: [Read the documentation](#) to learn more about creating bots.

Step 2: Go to Azure

Create a bot

Click to create a bot in Azure

You will be redirected to the Azure portal to create a bot. Click on create after filling all details to provision a bot resource.

Skip all **Got it**

This file is meant for personal use by saurabh.dharma01@gmail.com only.

Sharing or publishing the contents in part or full is liable for legal action.

Create your first question answering project

The screenshot shows the Microsoft Azure portal interface for creating a custom deployment. The top navigation bar includes the Microsoft Azure logo and a search bar. Below the header, the breadcrumb navigation shows 'Home >'. The main title is 'Custom deployment' with a 'Deploy from a custom template' subtitle. A navigation bar at the top of the page includes 'Basics' (which is selected), 'Web App', and 'Review + create'. The 'Template' section displays a 'Customized template' card with a warning message: 'Ensure that the source of the template is trustworthy. Deploying a template from untrustworthy sources can result in your cloud environment being compromised.' The card also shows '4 resources' and icons for 'Edit template', 'Edit parameters', and 'Visualize'. The 'Project details' section allows selecting a subscription, with 'Visual Studio Ultimate with MSDN' currently chosen. At the bottom, there are three buttons: 'Review + create' (highlighted in blue), '< Previous', and 'Next : Web App >'.

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Create your first question answering project

Microsoft Azure Search resources, services, and docs

Home >

Custom deployment

Deploy from a custom template

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Visual Studio Ultimate with MSDN

Resource group * ⓘ DeakinCLURG Create new

Instance details

Resource group location * ⓘ (Asia Pacific) Southeast Asia

Azure Bot

Bot handle * ⓘ DeakinCLU-Lang-bot

Choose your pricing tier

Select a pricing tier for your Azure Bot resource. You can change your selection later in the Azure portal's resource management. Learn more about available options, or request a pricing quote, by visiting the [Azure Bot Services pricing](#)

Pricing tier Free Change plan

Microsoft App ID

Add user assigned identities to grant the resource access to Azure Bot resource.

Creation type Create new User-assigned managed identity Use existing User-assigned managed identity

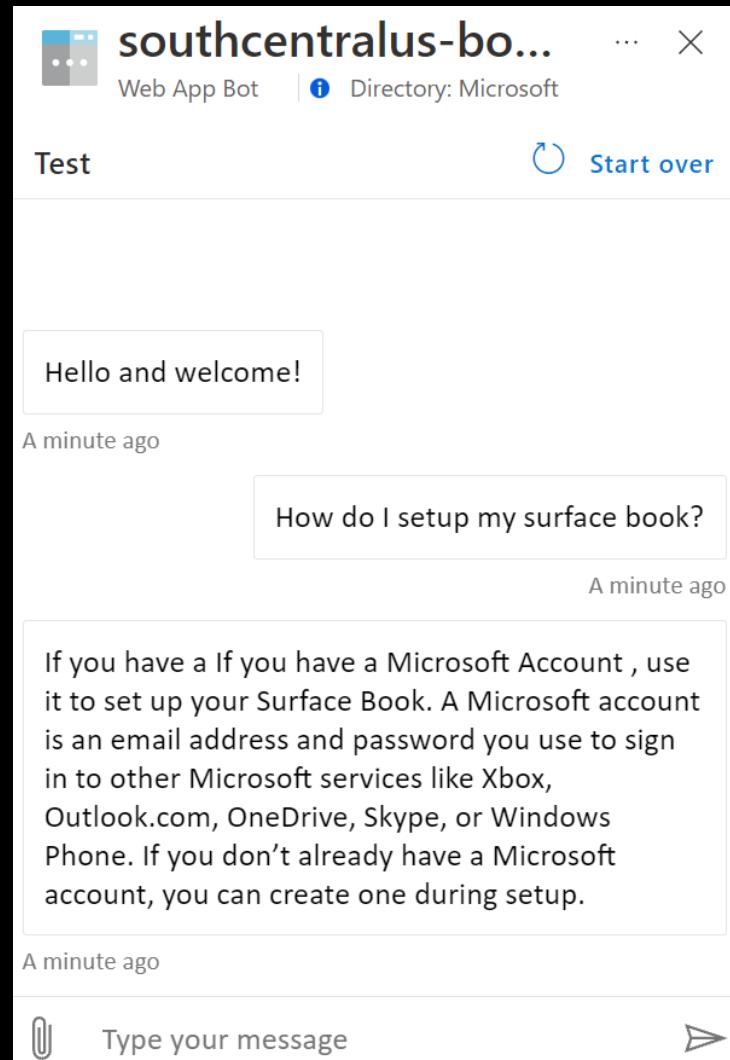
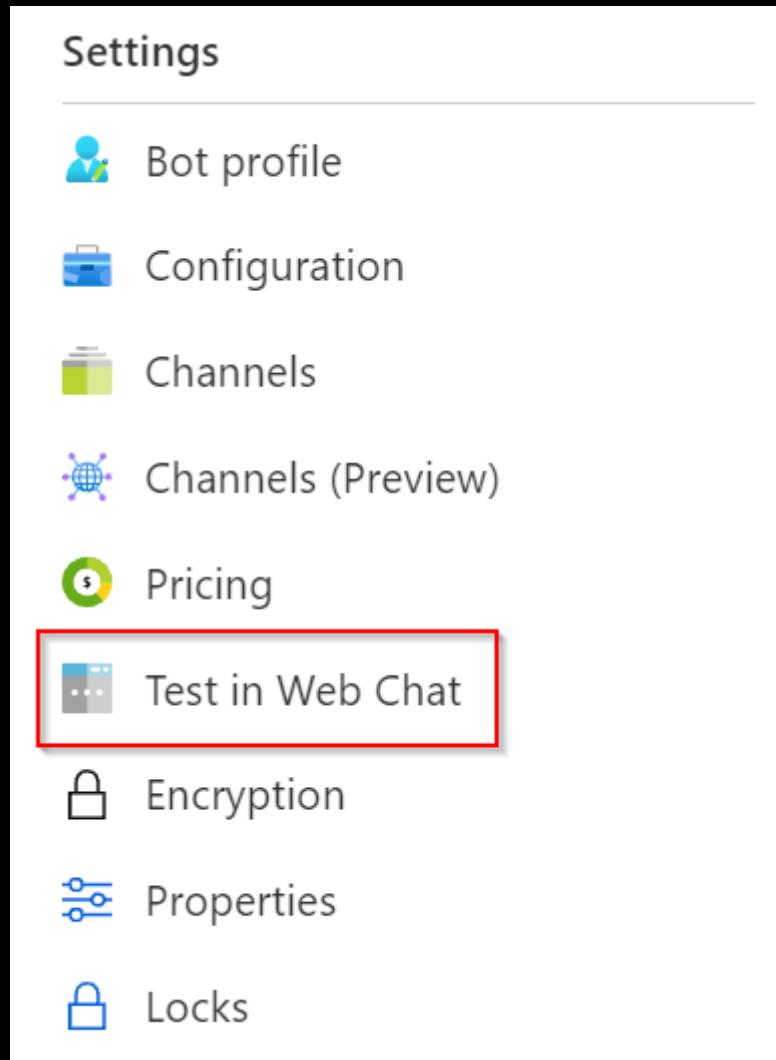
Review + create < Previous Next : Web App >

Setting	Value
Bot handle	Unique identifier for your bot. This value needs to be distinct from your App name
Subscription	Select your subscription
Resource group	Select an existing resource group or create a new one
Location	Select your desired location
Pricing tier	Choose pricing tier
App name	App service name for your bot
SDK language	C# or Node.js. Once the bot is created, you can download the code to your local development environment and continue the development process.
Language Resource Key	This key is automatically populated deployed question answering project
App service plan/Location	This value is automatically populated, do not change this value

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Create your first question answering project



Integrate the bot with channels

The screenshot shows the Microsoft Bot Channels registration interface. On the left, a sidebar menu includes: Overview, Activity log, Access control (IAM), Tags, Settings (with Bot profile, Configuration, and Channels selected), Pricing, Test in Web Chat, Encryption, Networking, Properties, Locks, Monitoring (with Conversational analytics, Alerts, Metrics, Diagnostic settings, and Logs), and Automation (with Tasks (preview) and Export template). The main content area has a search bar at the top. Below it, a message says "You are using the updated channels page. Let us know what you think by providing feedback" with a "Feedback" button. A "Get bot embed codes" button is also present. The main content is divided into two sections: "Connected channels" and "Available channels".

Channel	Health status	Details	Actions
Web Chat	Healthy	Embeddable Web Chat control	

Available Channels

Channel	Details
Alexa	Alexa Channel
Direct Line Speech	Direct Line Speech Channel
Direct Line	REST API for communicating directly with a bot
Email	O365 Email Channel
Facebook	Support for Text Messaging via Facebook
GroupMe	GroupMe Channel
LINE	Support for LINE Channel
Microsoft Teams	Microsoft Teams Channel
Omnichannel	Omnichannel Channel

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Part 5

Conclusion and Recap

This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable for legal action.



Recap

I. Introduction to Microsoft Azure Conversational Language Understanding (CLU)

- Example usage scenarios
- Project Development Lifecycle
- Responsible AI
- Create a CLU Project (create, train, deploy, test) in Language Studio

II. CLU and Language Understanding Intelligence Service (LUIS)

- Differences between CLU and LUIS
- III. Creating a Conversational Bot using CLU
- Integrate conversational language understanding with Bot Framework
- Import a project in CLU (train and deploy)
- Update settings
- Identify Integration points
- Run the bot locally
- Test the bot

IV. Low Code/No Code Development with CLU

- Introduction to Low Code/No Code Development
- Advantages of using Low Code/No Code Development
- Create a FAQ bot
- Chat in web chat
- Enable bot in supported channels

VI. Conclusion

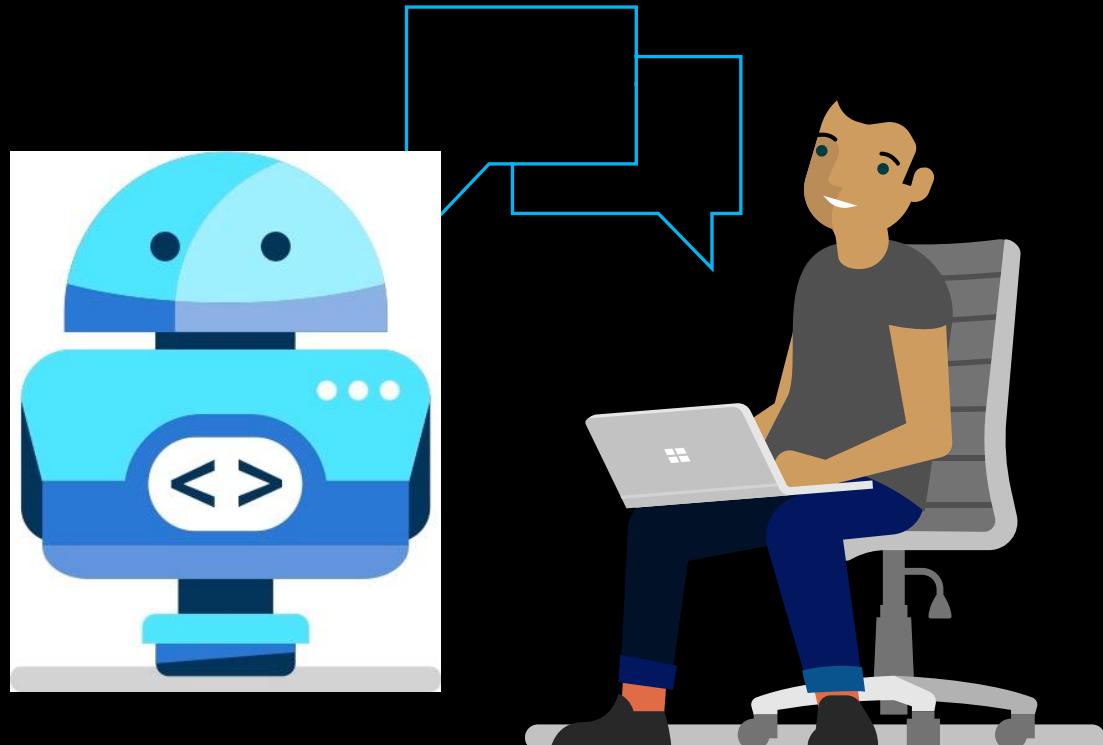
- Recap of key points
- Discussion of future developments
- Resources and next steps

Conversational AI

What is Conversational AI?

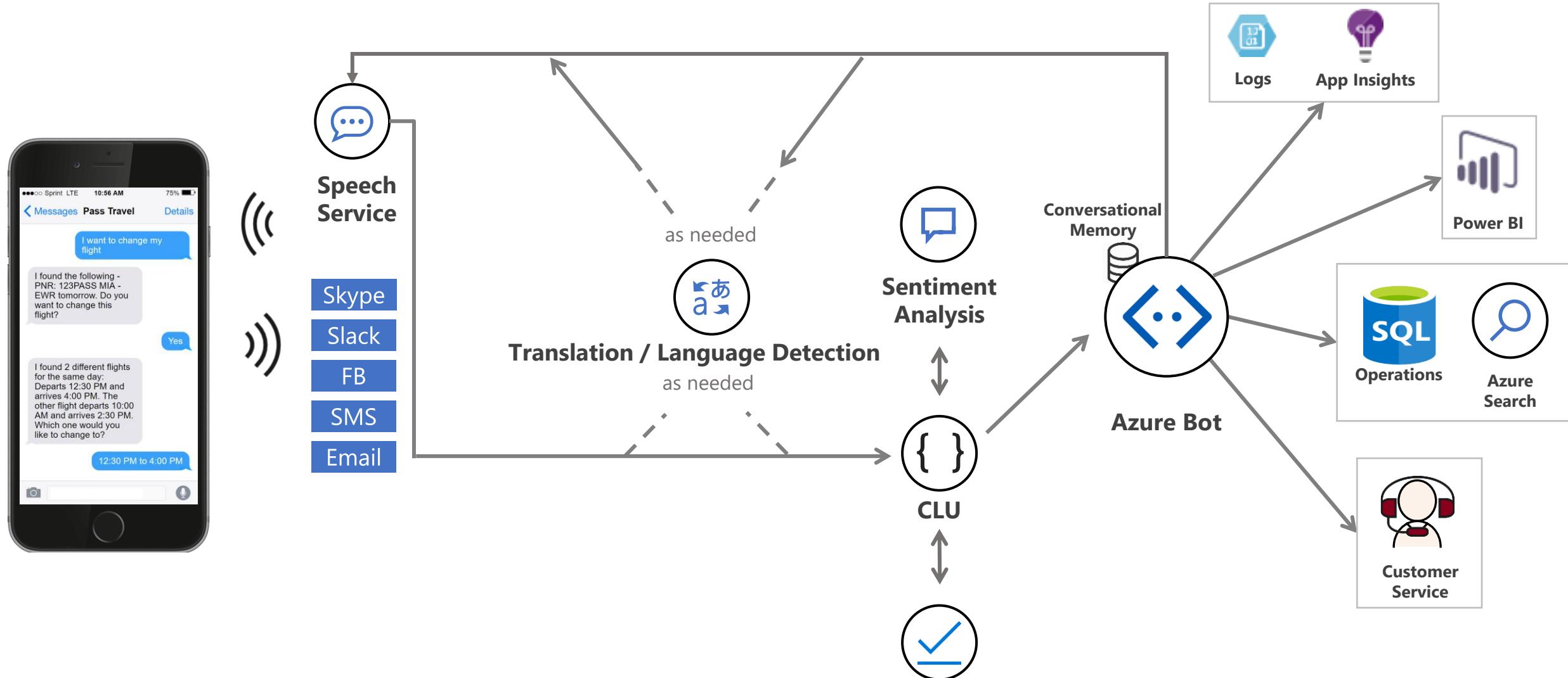
Conversational AI is a subfield of artificial intelligence focused on producing **natural and seamless conversations** between humans and computers

- A new **user interface paradigm**
- Exposes software services through **conversational interface**
- In apps, browser and on **IoT devices**



Conversational Language Understanding (CLU)

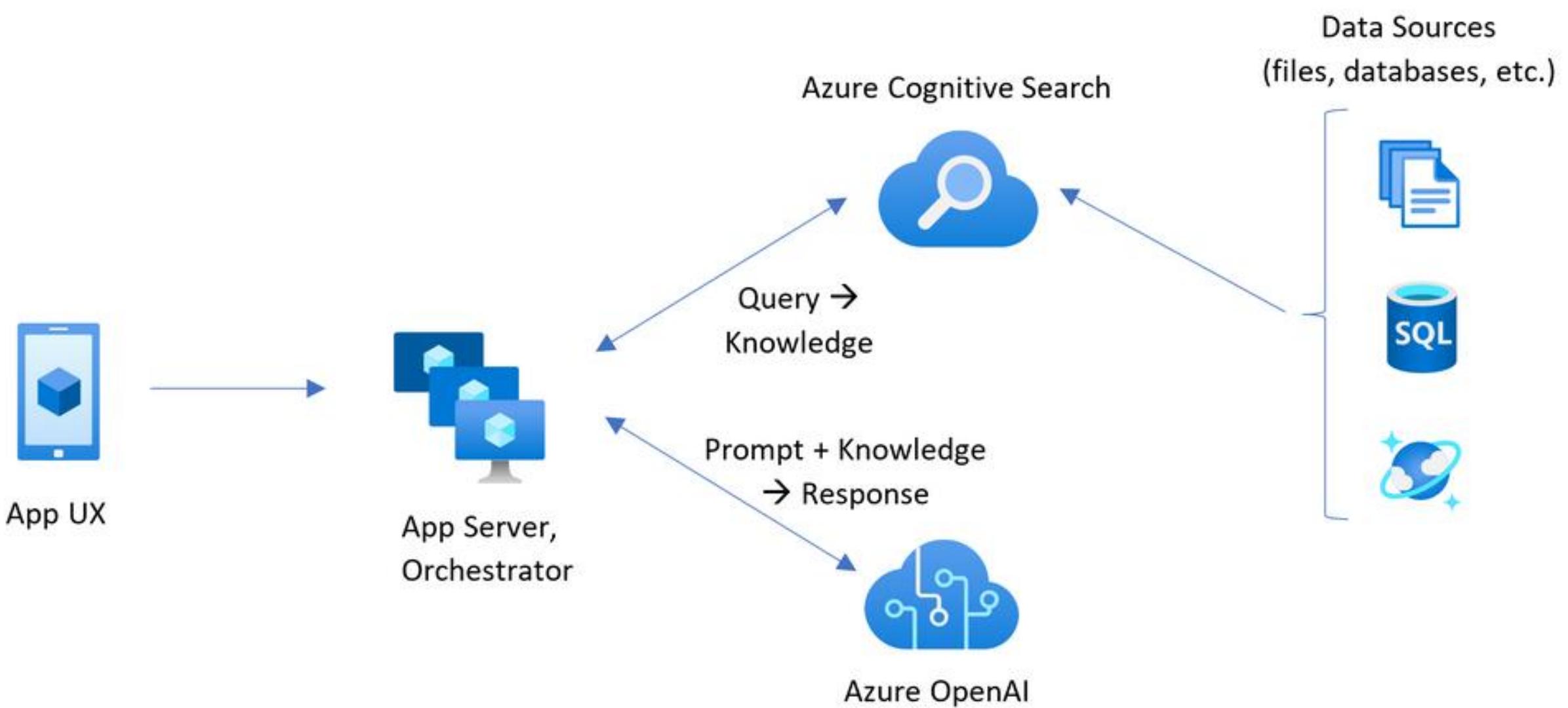
Connect: Bot Framework + Cognitive Services



This file is meant for personal use by saurabh.dharma01@gmail.com only.
Sharing or publishing the contents in part or full is liable to legal action.



Step it up with Azure OpenAI



Put responsible AI into action

Most comprehensive responsible AI and data privacy standards



Building AI products responsibly



Apply responsible AI guidelines and standards throughout the software development lifecycle

Systematically test Cognitive Services for fairness and invest in diverse training data

Partner with experts in research to invent new solutions such as watermarking for synthetic audio content

Customers own and control their data

Providing tools for customers to use AI responsibly



Provide tools to help others understand, protect, and control their AI at every stage of innovation

Model explainability, interpretability and reproducibility capabilities

Responsible AI documentation & guidelines

Ensuring responsible use of AI



Limited access application process validates customers, scenario, and location

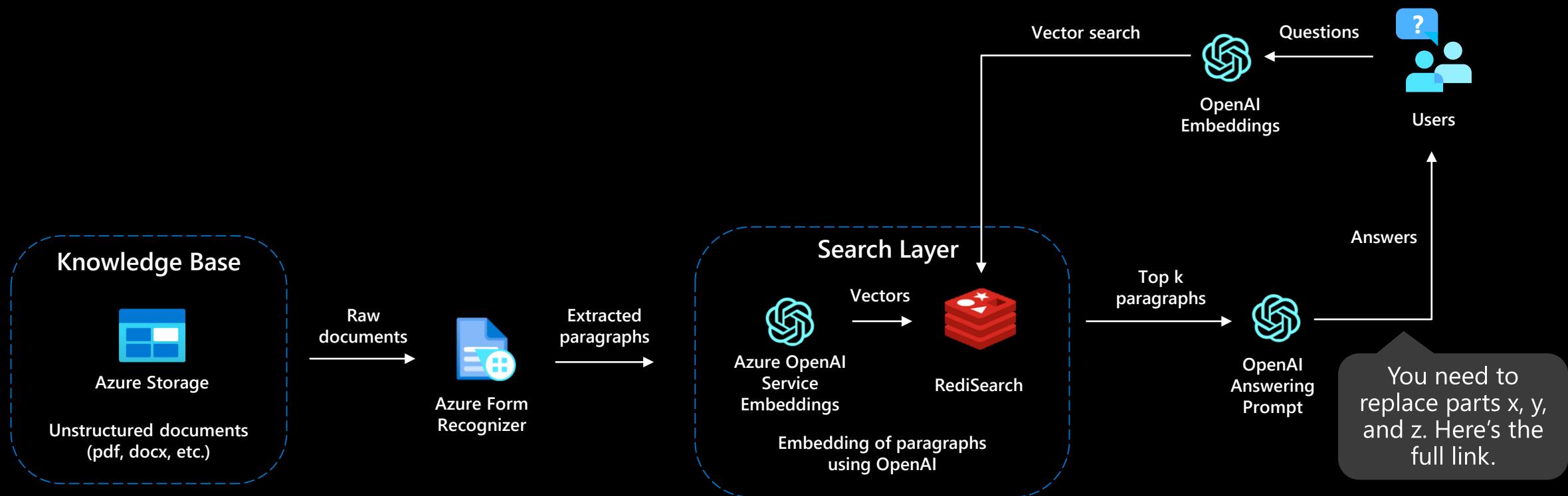
Active enrollment verification feature for Custom Neural Voice and Speaker Recognition protects end users

Content filtering and abuse detection built into the Azure OpenAI Service to help customers build safe high-quality applications

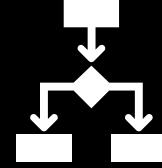
Q&A with Semantic Answering with Azure OpenAI Service

Extract precise answers from your unstructured documents
similar to ChatGPT

The xyz is broken
on machine 5243,
which part do I
need to replace?



Resources

Join Upskilling Cohort	https://aka.ms/MSA223	
Build a Python Azure Bot with Joseph	https://aka.ms/BuildAzureBot	
YouTube Playlist	https://aka.ms/MSAPlay	
Build a Language Understanding Model	https://aka.ms/BuildLUM	
Choose a bot building tool	https://aka.ms/ChooseBot	
Build a Q&A Bot	https://aka.ms/createfaqbot	
Conversational Language Understanding Notes	https://aka.ms/CLU	

Links from Q&A

<https://learn.microsoft.com/en-us/azure/cognitive-services/speech-service/tutorial-voice-enable-your-bot-speech-sdk>

<https://www.microsoft.com/en-us/ai/responsible-ai>

<https://www.microsoft.com/en-us/ai/responsible-ai-resources>

<https://learn.microsoft.com/en-us/azure/bot-service/bot-builder-concept-luis?view=azure-bot-service-4.0>
<https://www.microsoft.com/en-us/ai/our-approach?activetab=pivot1%3aprimaryr5>

<https://learn.microsoft.com/en-us/azure/bot-service/bot-builder-concept-luis?view=azure-bot-service-4.0>

<https://podcasts.google.com/feed/aHR0cHM6Ly9hbmNob3luZm0vcy80NDM4NjhhYy9wb2RjYXN0L3Jzcw==>

<https://learn.microsoft.com/en-us/azure/cognitive-services/language-service/conversational-language-understanding/overview>

<https://learn.microsoft.com/en-us/azure/cognitive-services/language-service/question-answering/overview>

Links from Q&A

<https://learn.microsoft.com/en-us/training/student-hub/certifications>

<https://learn.microsoft.com/en-us/azure/bot-service/bot-builder-concept-authentication?view=azure-bot-service-4.0>

<https://learn.microsoft.com/en-us/azure/cognitive-services/language-service/concepts/developer-guide?tabs=language-studio>

<https://learn.microsoft.com/en-us/azure/cognitive-services/language-service/question-answering/quickstart/sdk?pivots=programming-language-csharp>

<https://techcommunity.microsoft.com/t5/apps-on-azure-blog/build-serverless-real-time-chat-application-with-web-pubsub-and/ba-p/2433211>

<https://learn.microsoft.com/en-us/azure/architecture/data-guide/technology-choices/real-time-ingestion>

Links from Q&A

<https://learn.microsoft.com/en-us/azure/cognitive-services/containers/disconnected-containers>

<https://github.com/Azure-Samples/cognitive-service-language-samples>

<https://learn.microsoft.com/en-us/azure/iot-hub/>

<https://github.com/microsoft/BotBuilder-Samples/tree/main/samples/python/02.echo-bot/deploymentTemplates>

<https://learn.microsoft.com/en-us/azure/machine-learning/concept-model-management-and-deployment#retrain-your-model-on-new-data>

<https://github.com/Azure/data-model-drift>

<https://learn.microsoft.com/en-us/azure/bot-service/bot-service-manage-channels?view=azure-bot-service-4.0>

<https://github.com/microsoft/BotBuilder-Samples/tree/main/samples/python/43.complex-dialog>

<https://youtube.com/playlist?list=PLhpOApnq4S2joXwHfZjaK1yMjujZ6epLp>

<https://aka.ms/msa23>

Free skill-building resources



Introduction to Azure OpenAI Service

Understand how you can use Azure OpenAI to build solutions against AI models within Azure.



Introduction to Programming

Learn about programming languages and the tools that developers use to create software.



Python for Beginners

Learn the basics of python, including how to use Jupyter notebooks, create programs and projects, and work with strings, math, lists, loops, dictionaries, and functions.



Introduction to Azure DevOps

Explore what DevOps is (and isn't) and learn how to get started with Azure DevOps.

[Explore all student learning paths and modules](#)

More free resources



Student Certifications

Build technical skills and prove your commitment to learning the latest technologies when you earn Microsoft Certifications, which are free to all eligible students!



Azure for Students

Build in the cloud free with Azure for Students.



GitHub Student Developer Pack

As a student, you can get offers and benefits from GitHub partners.



Visual Studio Code

Popular among students, this code editor has been redefined and optimized for building and debugging modern web and cloud applications.

To continue your
journey, register
here:

aka.ms/MSA23

