



# Conversational AI: QnA, Language Understanding & Personality in Bots

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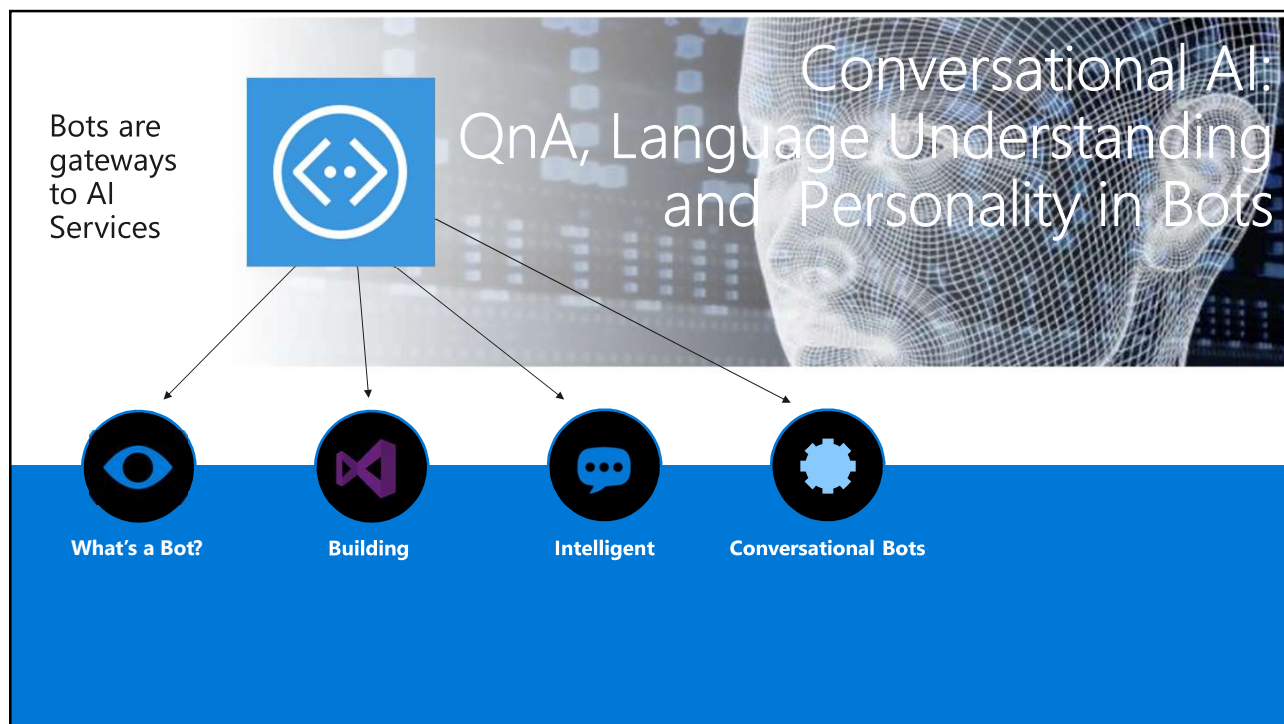
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## What's a Bot?

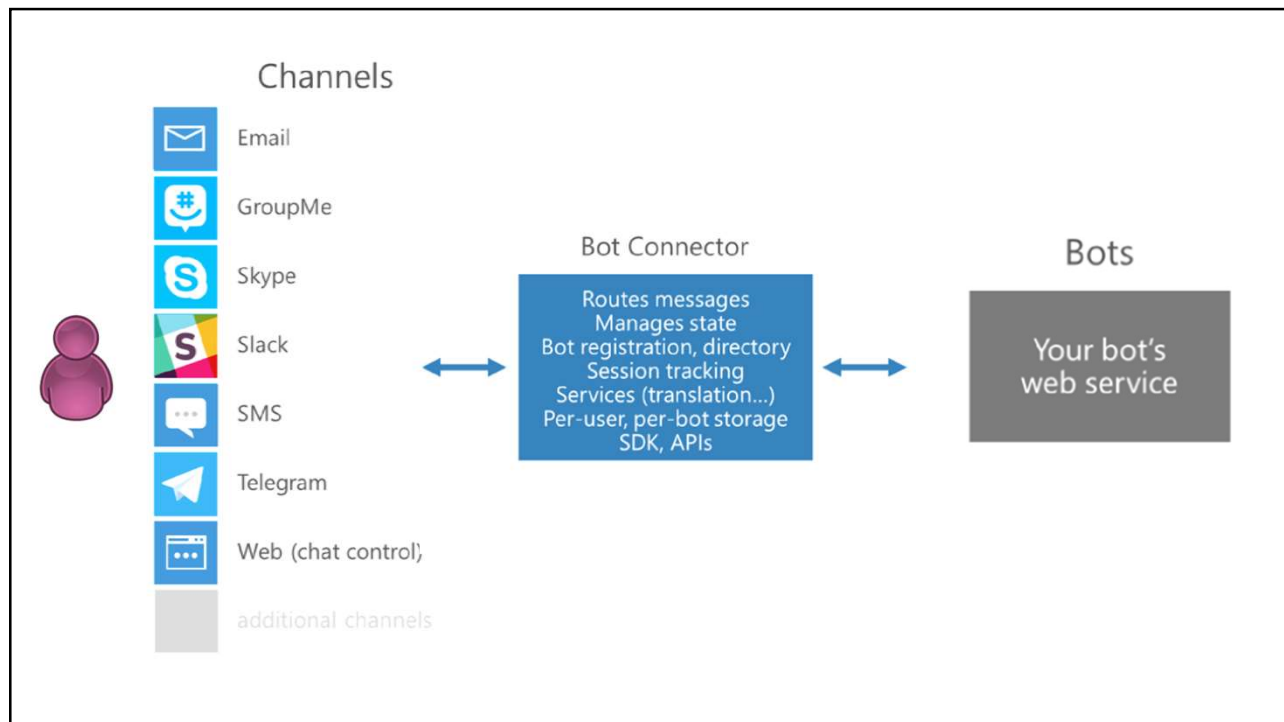
An **Internet bot**, also known as a **web robot**, **WWW robot** or simply **bot**, is a [software application](#) that runs automated tasks (scripts) over the [Internet](#).<sup>[1]</sup> Typically, bots perform tasks that are both simple and structurally repetitive, at a much higher rate than would be possible for a human alone. The largest use of bots is in [web spidering](#) (*web crawler*), in which an automated script fetches, analyzes and files information from web servers at many times the speed of a [human](#). More than half of all web traffic is made up of bots.<sup>[2]</sup>

Chatbots, or "**bots**" for short, are computer programs that interact with people in a way that mimics human interaction to some degree. The interaction can vary in complexity from simple keyword-driven queries to elaborate conversational systems using natural language processing and AI techniques.

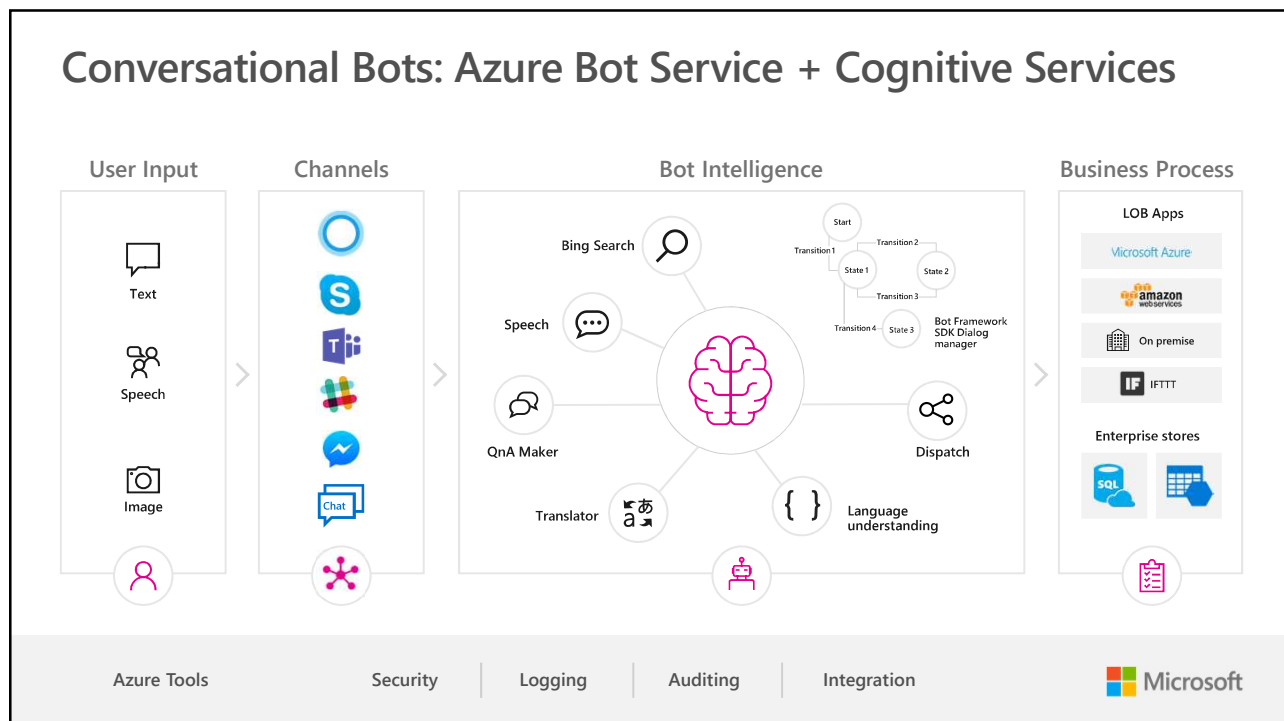
**Bots** are simply Telegram accounts operated by software – not people – and they'll often have AI features. They can do anything – teach, play, search, broadcast, remind, connect, integrate with other services, or even pass commands to the Internet of Things.

Bots provide an experience that feels less like using a computer and more like dealing with a person - or at least an intelligent robot. They can be used to shift simple, repetitive tasks, such as taking a dinner reservation or gathering profile information, on to automated systems that may no longer require direct human intervention. Users converse with a bot using text, interactive cards, and speech. A bot interaction can be a quick question and answer, or it can be a sophisticated conversation that intelligently provides access to services.

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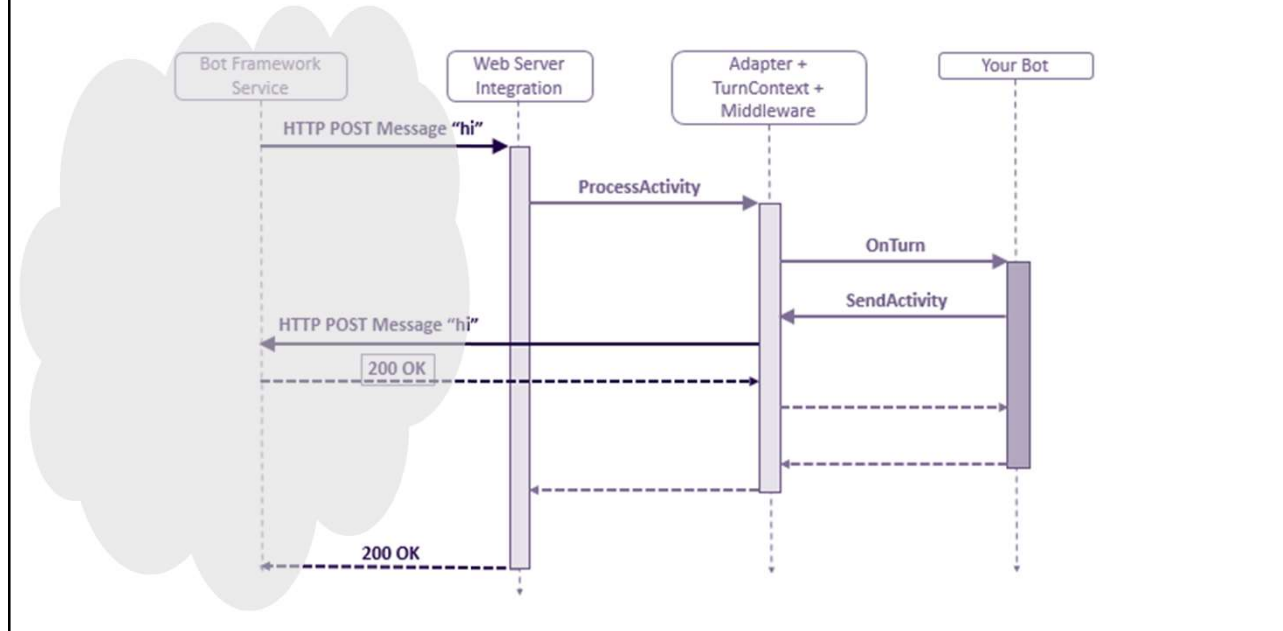


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## Bot Connector -> Web API -> Bot Code

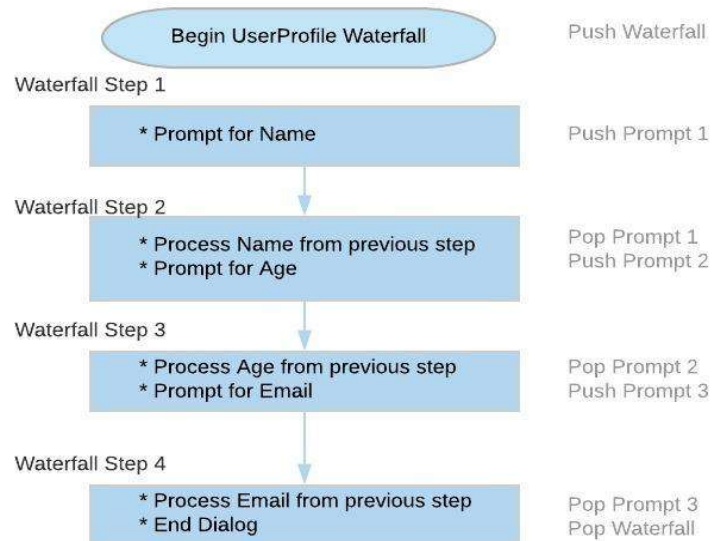


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## Demo – Basic Bot construction: dev, deploy, test

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## Channel, Activities, Adapter, Middleware, Turns, Dialogs...



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## Let's add more intelligence now...

### Explore the Cognitive Services APIs

Vision	Speech	Language	Anomaly Detection	Search
	<b>Text Analytics</b> Easily evaluate sentiment and topics to understand what users want		<b>Translator Text</b> Easily conduct machine translation with a simple REST API call	
	<b>Bing Spell Check</b> Detect and correct spelling mistakes in your app		<b>QnA Maker</b> Distill information into conversational, easy-to-navigate answers	
	<b>Content Moderator</b> Automated image, text, and video moderation		<b>Language Understanding</b> Teach your apps to understand commands from your users	

Ready to supercharge your app?

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## Adding Intelligence – 1



### Language Understanding Intelligent Service

Teach your apps to understand commands from your users



### Azure Search

Integrate search into a conversational experience



### QnA Maker

Distill information into conversational, easy-to-navigate answers



### Bing Speech API

Convert speech to text and back again, and understand its intent



### Speaker Recognition API

Give your app the ability to know who's talking



### Translator

Easily perform speech and text translation



### Custom Speech Service

Fine-tune speech recognition for anyone, anywhere

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## Demo: 'Question Answering' Bot

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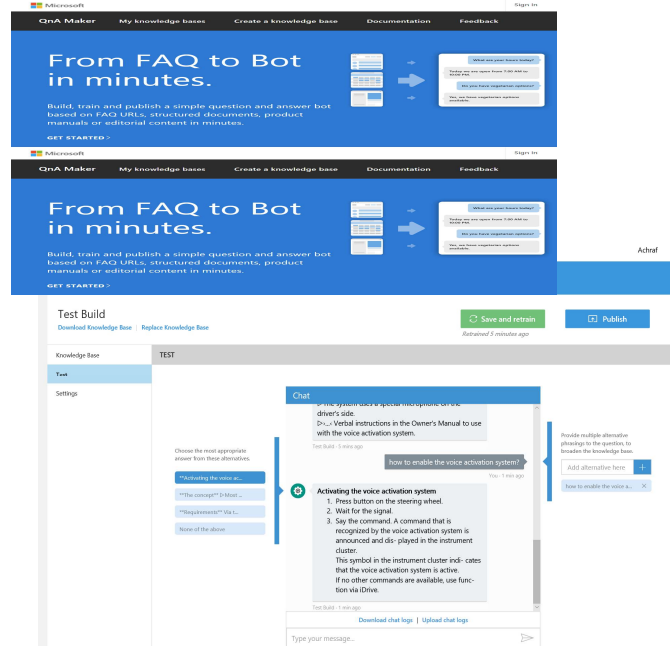
## QnA Maker

New architecture. Data and runtime hosted in your Azure subscription.

No more throttling!

Data privacy and compliance. QnA data is hosted within your Azure compliance boundary.

Azure Application Insights integration.



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## Adding Intelligence – 2



### Language Understanding Intelligent Service

Teach your apps to understand commands from your users



### Azure Search

Integrate search into a conversational experience



### QnA Maker

Distill information into conversational, easy-to-navigate answers



### Bing Speech API

Convert speech to text and back again, and understand its intent



### Speaker Recognition API

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Easily perform speech and text translation



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Fine-tune speech recognition for anyone, anywhere

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## LUIS terminology

Hello Jane

Heya!

How are you?

Good morning, Jane.

*Utterance = 'Hello Jane'*

*Intent = Greeting*

*Entity = Person [Jane]*

Example intent	Entity	Entity in example utterances
CheckWeather	<pre>{ "type": "location", "entity": "seattle" } { "type": "builtin.datetimeV2.date", "entity": "tomorrow", "resolution": "2018-05-23" }</pre>	What's the weather like in <span>Seattle</span> <span>tomorrow</span> ?
CheckWeather	<pre>{ "type": "date_range", "entity": "this weekend" }</pre>	Show me the forecast for <span>this weekend</span>

*Intent ~ method-to-invoke*

*Entity ~ parameters-for-invocation*

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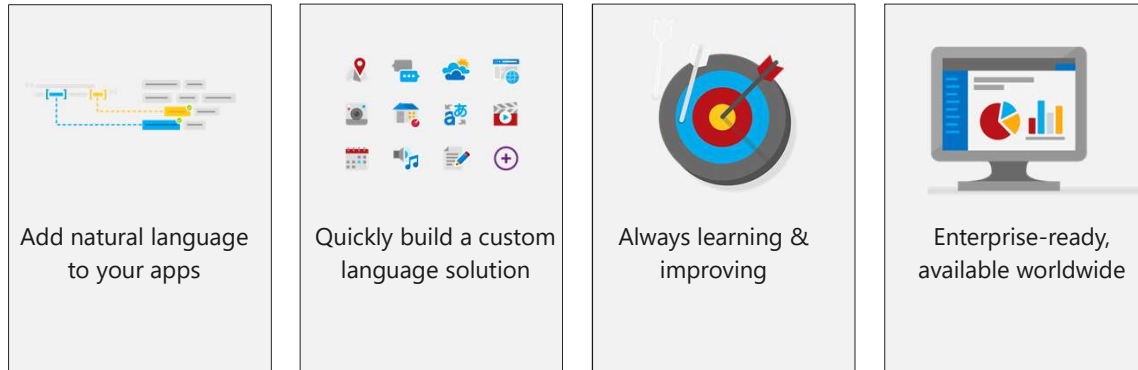
## Demo: Understanding natural language (LUIS support)

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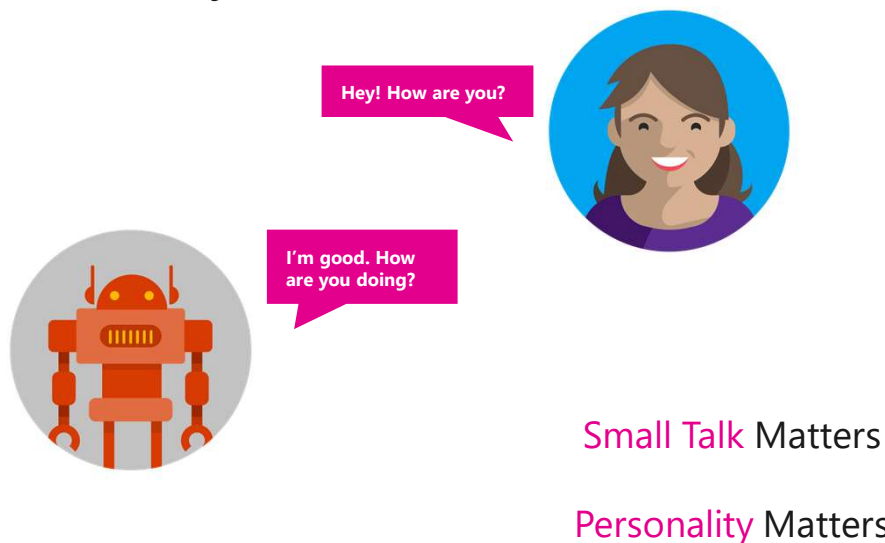
## Language Understanding (LUIS)

Machine learning-based service to build natural language into apps, bots, and IoT devices. Quickly create enterprise-ready, custom models that continuously improve.



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## Adding 'Personality'



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## Bot Personality

WeatherBot-Professional

Hello. I am weather bot

weather in seattle

Seattle Weather: High of 10°C and low of 8°C, with a 20% chance of rain.

thanks..

You're quite welcome.

I'm a bot, not a human.

There wouldn't be time to list everyone.

WeatherBot-Professional at 8:36:42 PM

Personality

Friendly Clear Chat

Top Responses & Ranked Score

That's good. I'm glad you are happy	-1.954
That's good. I'm happy for you	-2.204
That's good to hear	-2.228
I'm glad to hear it	-2.354
That's good news	-2.382

WeatherBot-FunFriend

Hi there! Ask me about the weather.

weather in seattle

We've got overcast skies with a low of 8°C tonight.

thanks..

Anytime!

I'm a bot. Kind of like a robot but without all the moving parts.

Techies.

WeatherBot-FunFriend at 8:38:36 PM

Professional
Friendly

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## Editorial Personality Chat Library

- 100 + small talk scenarios covered
- Choose between editorial responses in three personalities -  
Professional | Friendly | Humorous

Small Talk Query	Professional	Friendly	Humorous
"Thank you"	You're quite welcome.	You bet.	No prob.
"Will you marry me?"	I think it's best if we stick to a professional relationship.	You're three-dimensional. I'm non-dimensional. Our love can never be.	Sure. Take me to City Hall. See what happens.
"Who made you?"	There wouldn't be time to list everyone.	So many people!	Nerds.

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## Where next?

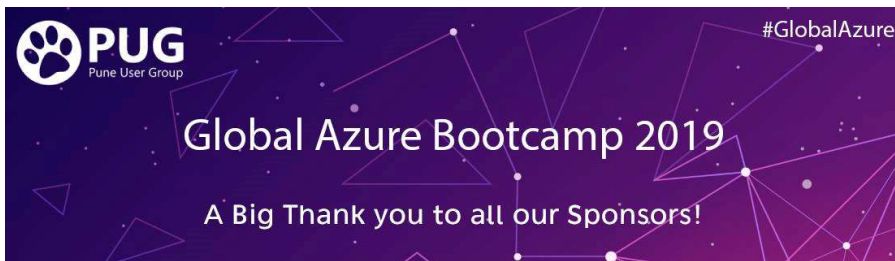
Get started - [aka.ms/BotBuilderOverview](https://aka.ms/BotBuilderOverview)

Everything else <https://github.com/Microsoft/BotBuilder>

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