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# Azure OpenAI Series (Virtual)

Saturday, 02 Dec, 2023

## Kick Start Your Azure OpenAI Journey Step by Step – Part 3



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Regional Microsoft Cloud Architect Lead

MVP Alumni, MCT



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# Aroh Shukla

MVP Alumni, MCT

Global Speaker

- Passionate to **learn**.
- Passionate to **share knowledge**.
- Passionate to work on **Microsoft Technologies**



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# AGENDA SLIDE

*Part 1*



**01**

## **Recap**

What we have covered  
in last 2 sessions



**02**

## **Fine tuning**

Adjusting pre-trained  
model for task.



**03**

## **Securing Azure OpenAI Service**

Different ways to  
secure OpenAI  
workloads



**04**

## **Azure AI Content Safety**

Different methods for  
content safety



**05**

## **Learning Resources**

How to learn OpenAI



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# Azure Open AI

Sessions Roadmap



## Part 01

Exploring Azure OpenAI: a rewarding journey into integrating Azure services with OpenAI tech. **Learn about ChatGPT, DALL-E2, and more to establish a strong AI foundation and unleash creativity.**



## Part 2

**Gain basic Azure OpenAI, access, models, use cases, pricing, deployment, and text model utilization.**



## Part 3

Part 3 enhances Part 2's learning: **refine models, ensure security, employ content safety**, demo applications. **Relevant for those eager to leverage Azure OpenAI for personal AI solutions..**



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# Session 1 (10 Oct 2023)

1. What is ChatGPT
2. Azure OpenAI vs OpenAI
3. AI Terminologies
4. History of ChatGPT
5. Compare ChatGPT plans
6. DEMOS

- [Slide Deck](#)
- Video Link:  
<https://www.youtube.com/watch?v=YUagKsFTR0>



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# Session 2 (04 Nov 2023)

1. How to access the Azure OpenAI
2. Different Models with Pros & Cons
3. Use cases
4. Pricings & Quotas
5. DEMOS

- [Slide Deck](#)
- Video Link  
<https://www.youtube.com/watch?v=eLNWngJDlzw>



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# Session 3 (02 Dec 2023)

1. Recap
2. Fine tuning
3. Securing Azure OpenAI Service
4. Azure AI Content Safety
5. DEMOS

- [Slide Deck](#)
- Video Link



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# Fine Tuning (Why?)

- Built in models were trained on **publicly available data**
- With Azure OpenAI service you can train the model **on your own data**
- Allows creating chat bots that **work on the organizational data**
- A huge **added value**



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# To fine tune OR NOT to fine tune

- **When you need a LLM tailor to a specific task or domain**

Consider fine tuning IF

- You want to teach the model a **new skill**
- You want to teach the model how to do **something with examples**
- You want to **reduce latency**

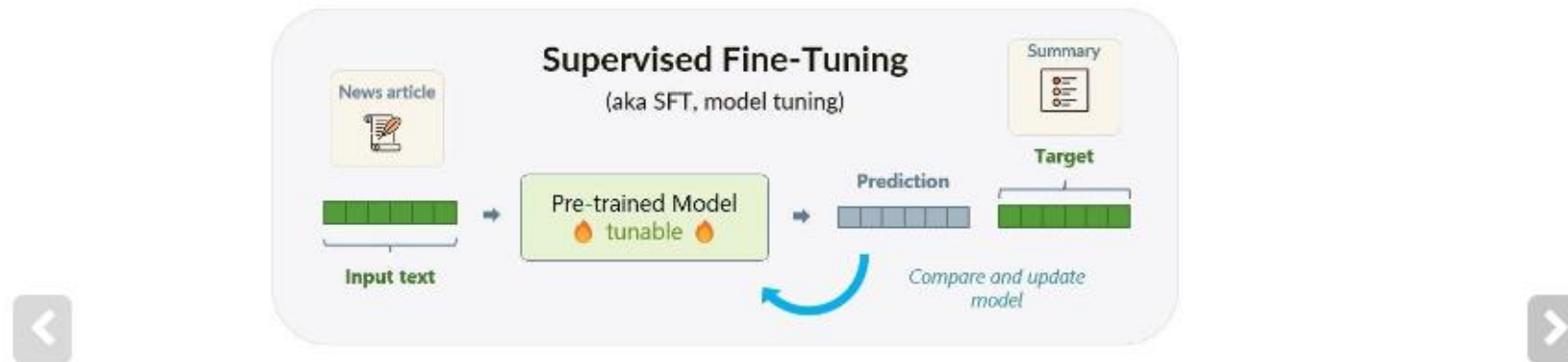


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# Fine Tuning - now available with Azure OpenAI Service

**Fine tuning:** You'll now be able to use **Azure OpenAI Service**, or **Azure Machine Learning**, to fine tune Babbage/Davinci-002 and GPT-3.5-Turbo.



## **Babbage-002 & Davinci-002:**

- GPT3 based: smaller, lower latency
- Understand & generate natural language or code
- Completion support

## **GPT-35-Turbo:**

- Most capable & cost effective GPT-3.5 model
- More sophisticated capabilities
- Chat support



# Fine Tuning - now available with Azure OpenAI Service

Model	Hourly Hosting	Input tokens	Output Tokens
Babbage-002	\$1.70	\$0.0004 / 1k	\$0.0004 / 1k
Davinci-002	\$3.00	\$0.0020 / 1k	\$0.0020 / 1k
GPT-35-Turbo	\$7.00	\$0.0015 / 1k	\$0.0020 / 1k

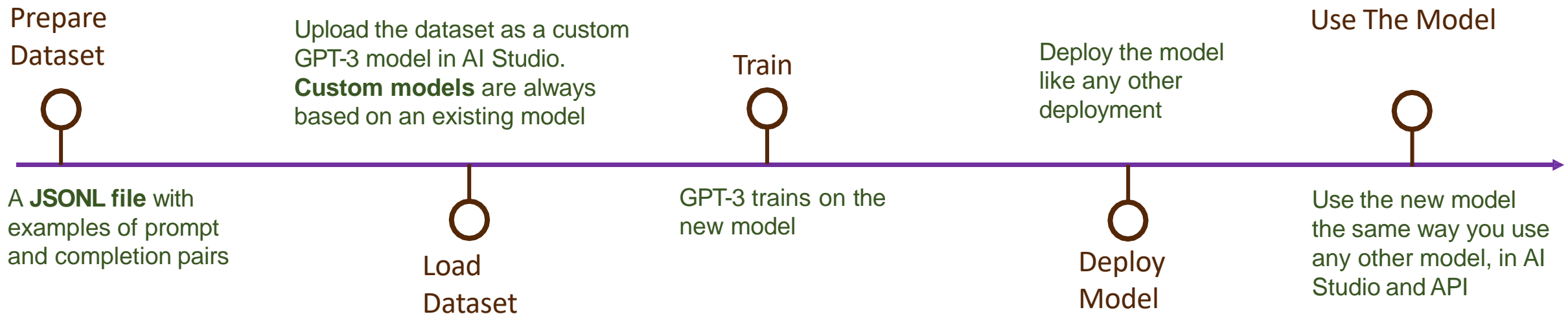
Model ID	Fine-Tuning Regions	Max Request (tokens)	Training Data (up to)
babbage-002	North Central US, Sweden Central	16,384	Sep 2021
davinci-002	North Central US, Sweden Central	16,384	Sep 2021
gpt-35-turbo (0613)	North Central US, Sweden Central	4096	Sep 2021



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# The Fine Tuning Process



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# The Fine Tuning – Resources

1. [Customize a model with fine-tuning \(preview\)](#)
2. [Advancing AI - Fine Tuning LLMs with Azure OpenAI](#)
3. [Azure OpenAI 101: An introduction to Building Custom AI Models](#) #python #chatgpt #azure

**NOTE:** Fine Tuning is costly exercise



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# DEMO 1: How to perform fine tuning the Azure OpenAI



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# Securing Azure OpenAI Service

- Azure has powerful security controls that helps securing cloud resources
- These controls can be applied also to OpenAI Service



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# Securing Azure OpenAI Service

- OpenAI Service can be protected using:

Network Security

Microsoft Entra ID (formerly Azure AD)



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# Network Security

- Access to OpenAI service can be limited **to specific networks**
- Can be also denied from **public network** and allowed only from **VNets using private IP**
- This is done using **Private Endpoint**
- The **most secure network access**



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# Microsoft Entra ID (Azure AD Identity)

- So far we used API key to access OpenAI
- Not very secure
- Anyone who has the key can access the resource
- It's more secure to use Azure AD identity
- Only authorized users and services can access the resource
- No need to use api-key



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# DEMO 2: How to secure the Azure OpenAI Service



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# Azure AI Content Safety

- Helps create secure online experience
- Detects hateful, violent, sexual, self-harm content
- Works using REST API
- Can be integrated into any user-generated web app
- Works in real time



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# What is Azure AI Content Safety

- A lot of user-generated content on the web

Social Networks

Education

User Rating

Chats

Online Marketplace

Forums

Gaming

More...



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# What is Azure AI Content Safety

- User-generated content requires moderation
- Looks for harmful content

**Hate**

**Sexual**

**Violence**

**Self harm**



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# What is Azure AI Content Safety

- Mostly manual
- Slow
- Costly
- Error prone



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# What is Azure AI Content Safety

- Azure AI Content Safety automates text and image moderation
- Analyzes the content and returns score in the four categories
- Real time analysis using REST API
- Azure AI Content Safety Studio for testing content and monitoring activity
- Can be used with any web app



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# Azure AI Content Safety Cost

Instance	Features	Price
Free – Web	Text	5,000 text records per month <sup>1</sup>
	Image	5,000 images per month
Standard – Web	Text Jailbreak risk detection Protected material detection	<b>\$0.75</b> per 1,000 text records <sup>1</sup>
	Image	<b>\$1.50</b> per 1,000 images

1A text record in the **S tier contains up to 1,000 characters** as measured by Unicode code points. If a text input into the Content Safety API is more than 1,000 characters, it counts as one text record for each unit of 1,000 characters. For instance, if a text input sent to the API contains 7,500 characters, it will count as 8 text records. If a text input sent to the API contains 500 characters, it will count as 1 text record.

[Azure AI Content Safety pricing](#)



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# DEMO 3: How to use Azure AI Content Safety



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# What is next in Azure OpenAI

- **Attend webinars** where Microsoft, Microsoft MVPs & community leaders share a lot about Azure OpenAI
- **YouTube Videos:** Watch a lot an amazing content from Microsoft and community leaders.
- **Online Trainings**
  - Microsoft learn
  - Subscribe to quality online platforms.
  - Ask questions from AI community



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# Courses on Azure OpenAI

- **LinkedIn** Career Essentials in Generative AI by Microsoft and LinkedIn - [Career Essentials in Generative AI by Microsoft and LinkedIn](#)
- **Coursera: (Free to audit / \$49 for sharing)**
  - 1) [Generative AI for Everyone](#)
  - 2) [AI For Everyone](#)



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