



# Building a Copilot for Your Own Application with Semantic Kernel

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The MVVM Pattern in .NET MAUI (Packt)



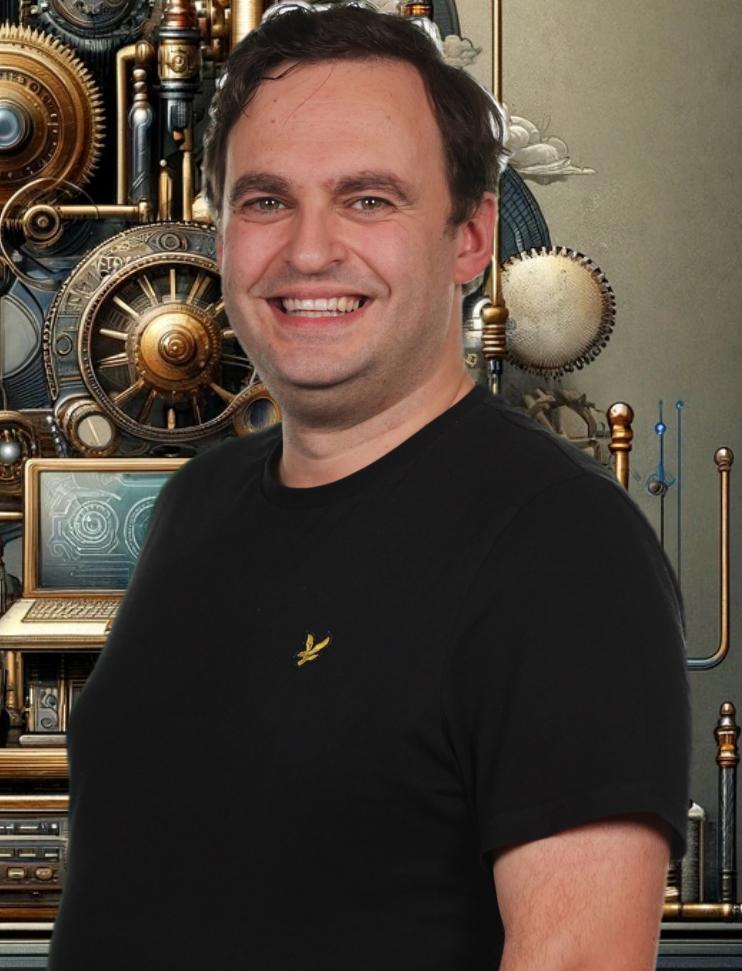
Active Community Member



[Blog.PieEatingNinjas.be](http://Blog.PieEatingNinjas.be)



Microsoft MVP



# Copilot:

[*'kou,paiłət*] *noun*

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1. An AI buddy that engages in conversation with a user to collect information and confirm understanding.
2. A digital assistant that collaborates closely with a user, requiring consent before executing tasks or actions.

# Going Beyond RAG



RAG = enhancing responses with information retrieval

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RAG can be part of a Copilot

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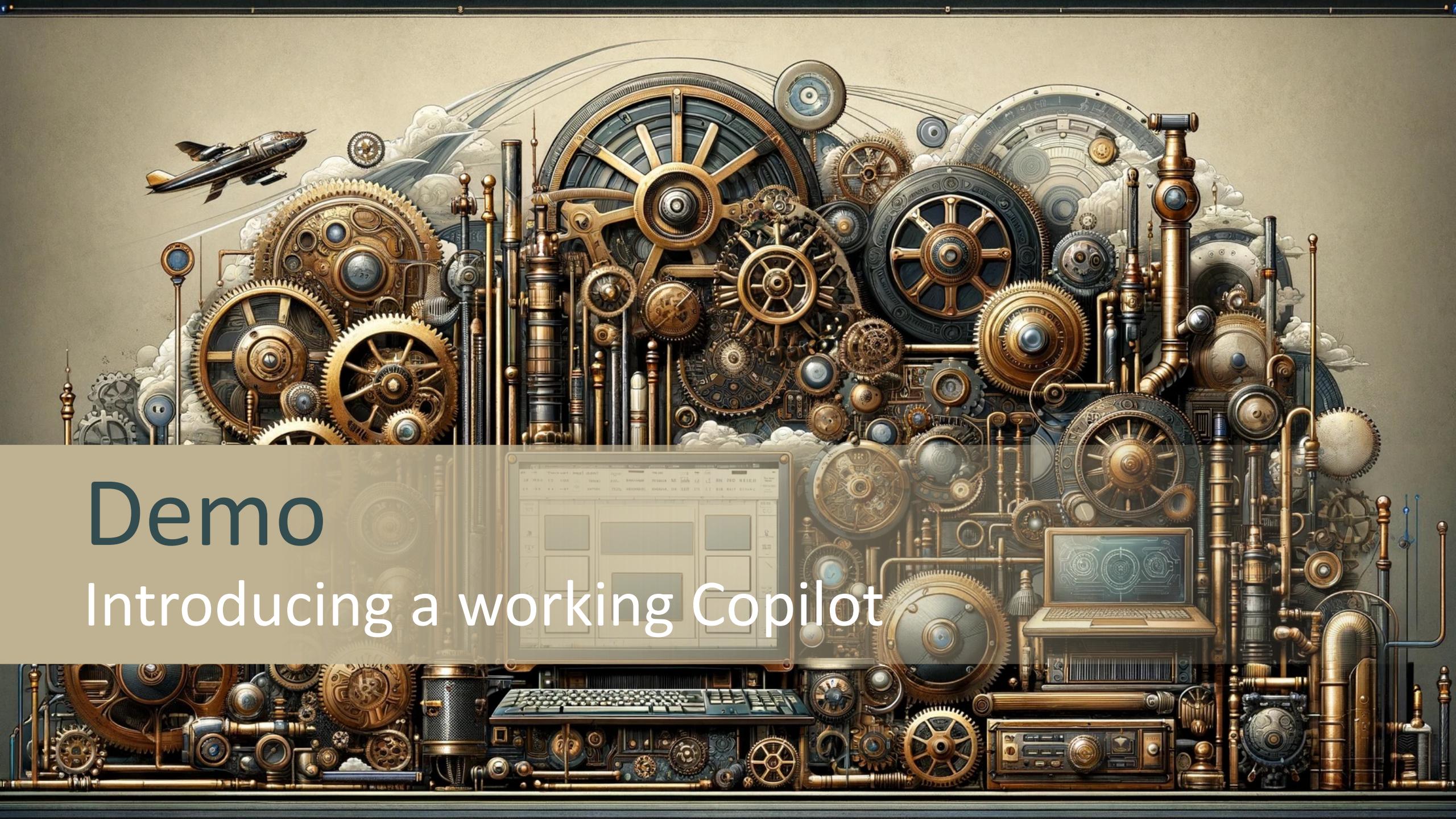
Our Copilot focusses on

- Conversational AI, engaging with user
  - Gather information
  - Clarify intents
  - Seek permission before taking action
- 



# Demo

## Introducing a working Copilot



# Under the hood



## Large Language Model

- › GPT 4
- › OpenAI API
- › Azure Open AI Services
- › Prompt Engineering



## Semantic Kernel

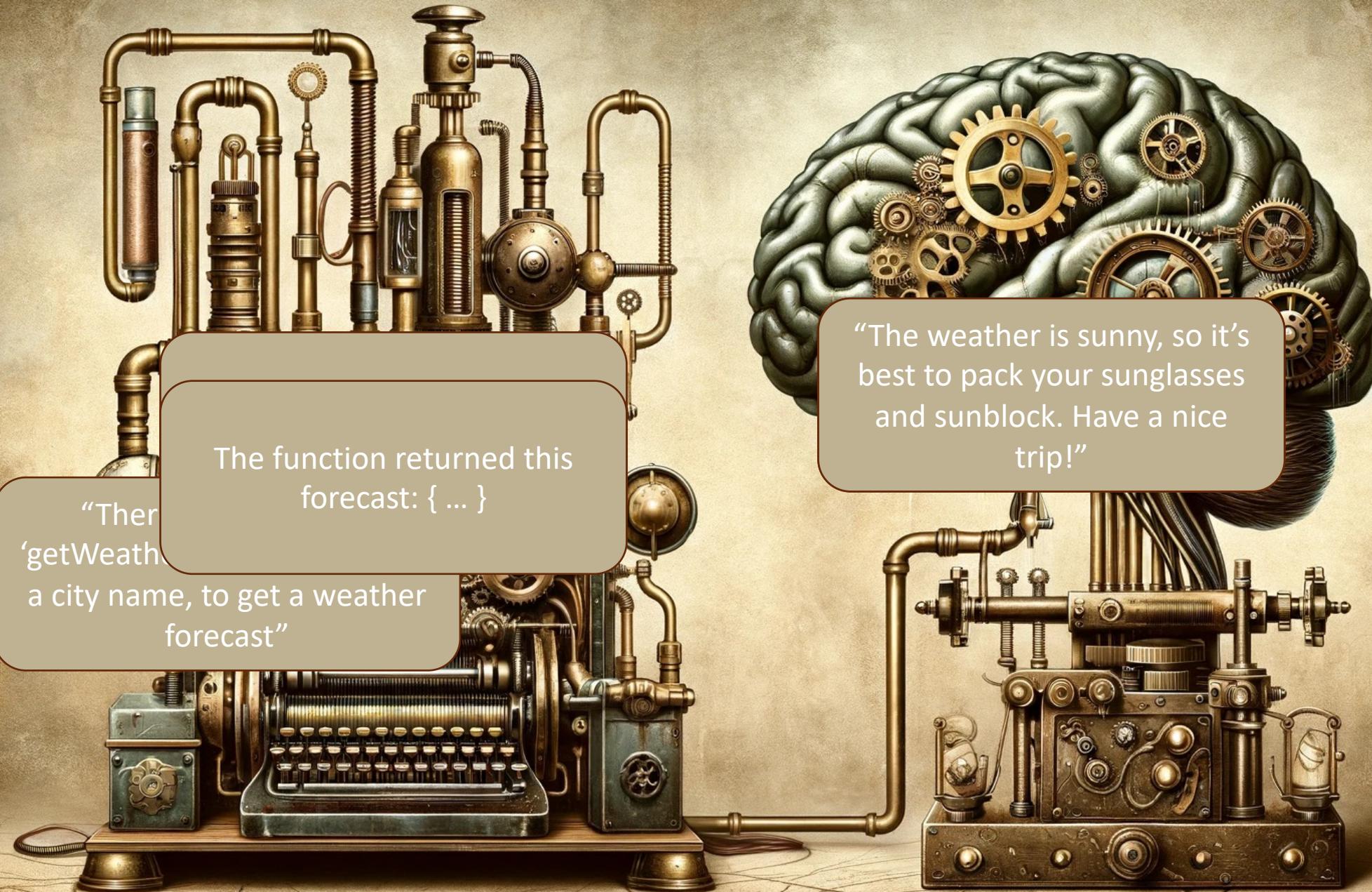
- › Open-Source SDK by Microsoft
- › C#, Python, Java
- › Orchestrate AI capabilities
- › Build intelligent Agents that understand and execute complex workflows



## OpenAI Function Calling

- › LLM suggests specific function to call in response to user query
- › Response is send back to LLM
- › >= GPT 3.5 Turbo
- › Seamless with Semantic Kernel





# Let's build this



Our API endpoints are ready to use  
No update needed

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Define a goal (Prompt Engineering)

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Define functions (Plugins, Function Calling)

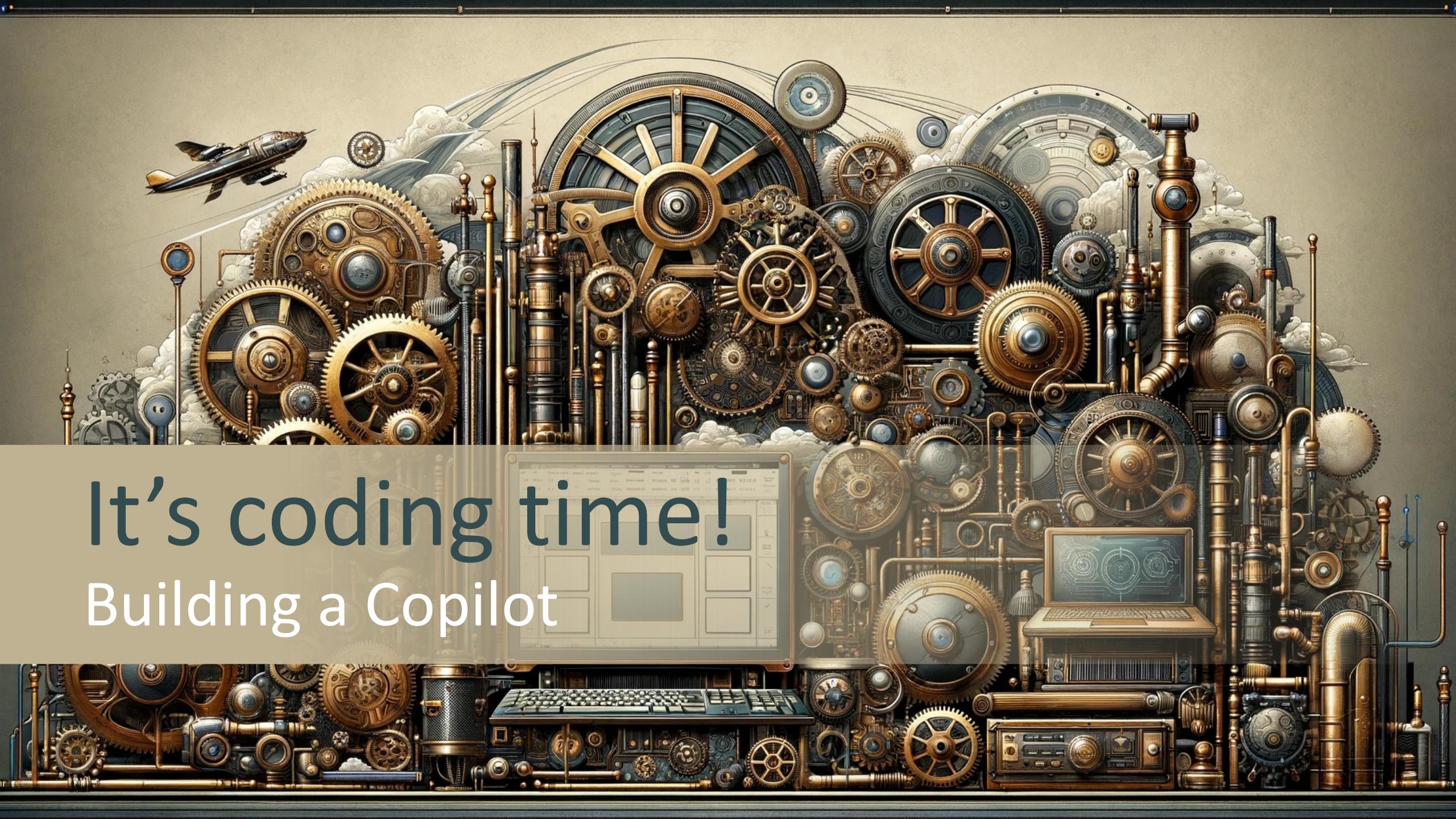
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Orchestration through Semantic Kernel

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It's coding time!  
Building a Copilot



# Key Takeaways



## Getting started is straightforward

- › Proof of Concept
- › Decision Maker Buy-In
- › Familiar tools
- › Abstraction through Semantic Kernel
- › Community Support



## The Principle of Diminishing Returns

- › Quick Wins
- › Refinement Takes (a lot of) Time
- › Increasing complexity with advanced features
- › Maintainability



## Mindful Resource Management

- › Cost of Tokens
- › Optimize Interactions
- › Monitor Usage



Questions?

# Thank you!

A dark teal circular icon containing a white lowercase letter 'i', representing an information or help symbol.

## More information

- › Me | [Pieter Nijs](#)
- › Work | <https://xebia.com/digital-transformation/microsoft-services/>
- › LinkedIn | <https://www.linkedin.com/in/pieter-nijs>
- › Sources | <https://github.com/PieEatingNinjas/copilot-semantickernel/tree/demo>
- › Blog | <https://blog.pieeatingninjas.be>





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