Microsoft

Reactor

Developing Windows Widgets with Generative AI

Peter Bull, Microsoft MVP - .NET & Windows Development

About

Peter Bull

Microsoft MVP - .NET & Windows Development

Speaker Bio: Developer with over three decades of personal experience & over two decades of professional experience for web, mobile & desktop

Comentsys.com: Websites, Packages & Software

RoguePlanetoid.com: Posts, Articles & Podcast

Tutorialr.com: Tutorials, Talks & Workshops

Agenda

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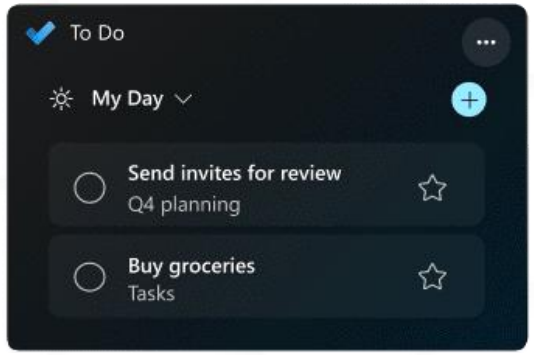
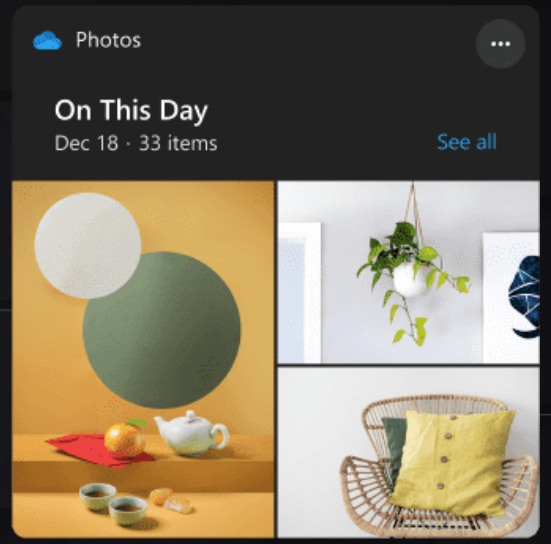


Windows Widgets



Overview

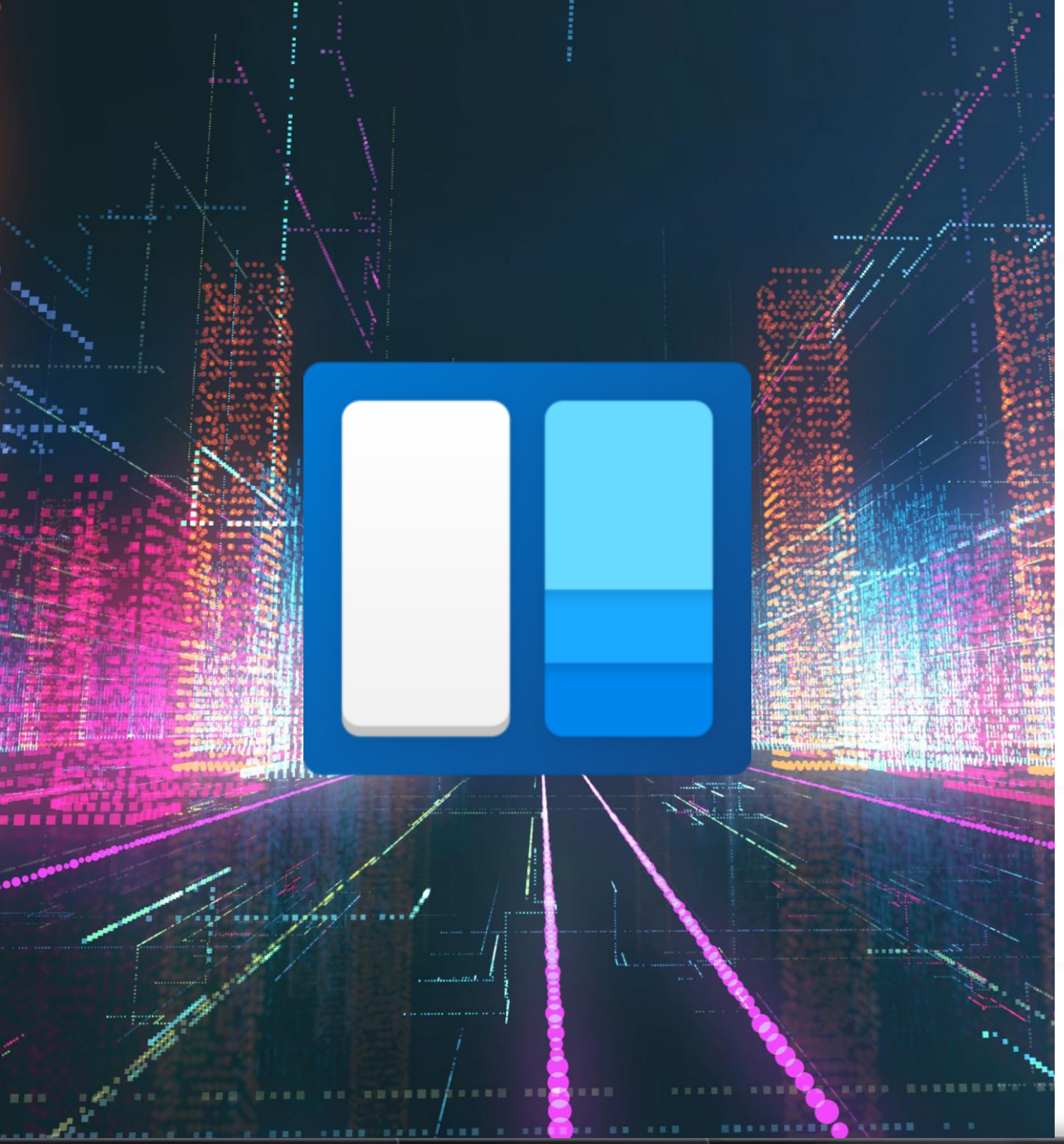
Windows Widgets

Widgets

Quick access to information all from the click or swipe of the Widgets Board

Adaptive Cards

Platform-agnostic JSON snippets for rich interactive content across platforms such as Widgets



Widgets

Windows Widgets

Windows 11 with Widgets Board enables quick-and-easy access to at-a-glance information including built-in & Microsoft Store Widgets

Features:

- Organise & save time with the Widgets Board
- Customise & personalise what's important
- Interactive & dynamic text or images
- Designed using Adaptive Cards

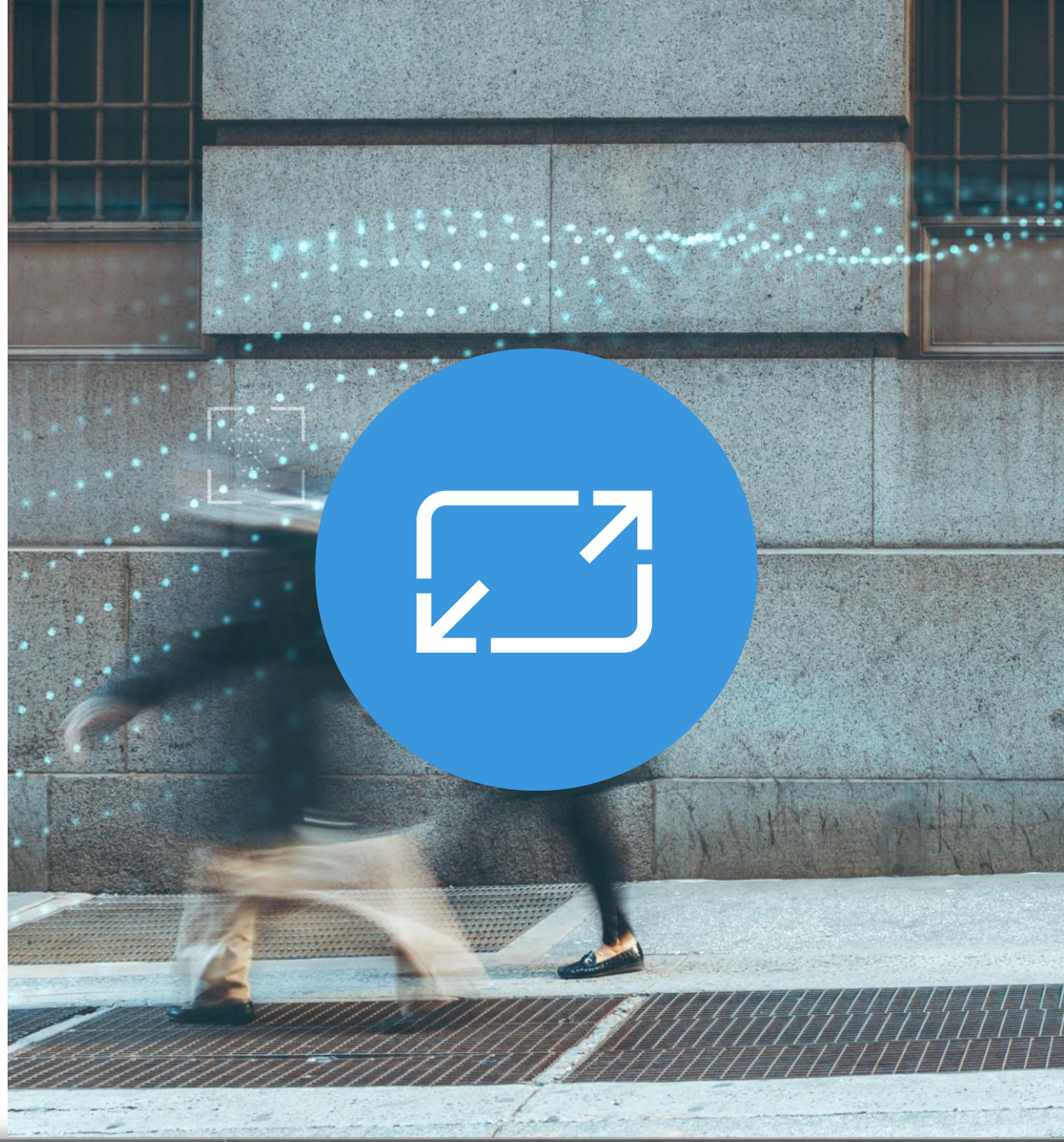
Adaptive Cards

Windows Widgets

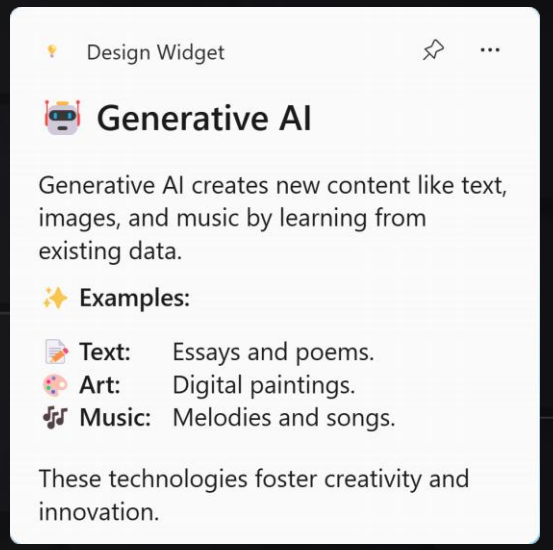
Adaptive Cards are platform-agnostic UI snippets in JSON for rich interactive content across platforms or services such as Widgets

Features

- Exchange at-a-glance content supporting text and images
- Create using JSON schema or drag-and-drop designer
- Update based on user actions or data changes
- adaptivecards.io



Widget Provider



Windows App SDK

Widget Provider

Windows App SDK to develop modern native Windows applications using WinUI 3 targeting from Windows 10 RS5 to latest Windows 11

Features

- Decoupled from Windows & updated every six months via NuGet
- Develop applications using C++ with Win32 or C# with .NET
- Install Windows application development workload
- aka.ms/winappsdk

Widget Provider

IWidgetProvider	IWidgetProvider2
`ActivateWidget(WidgetContext)`	`OnCustomizationRequested(WidgetCustomizationRequestedArgs)`
`CreateWidget(WidgetContext)`	
`Deactivate(String)`	
`DeleteWidget(String, String)`	
`OnActionInvoked(WidgetActionInvokedArgs)`	
`OnWidgetContextChanged(WidgetContetxChangedArgs)`	

aka.ms/widgetdevdocs

Comentsys.Toolkit.WindowsAppSdk

WidgetProviderBase	WidgetBase
CreateWidget(WidgetContext)	SetState(state)
DeleteWidget(widgetId, customState)	CreateWidget(state)
OnActionInvoked(WidgetActionInvokedArgs)	Activate()
OnWidgetContextChanged(WidgetContextChangedArgs)	Deactivate()
OnCustomizationRequested(WidgetCustomizationRequestedArgs)	DeleteWidget(state)
Activate(WidgetContext)	OnActionInvoked(WidgetActionInvokedArgs)
Deactivate(widgetId)	OnWidgetContextChanged(WidgetContextChangedArgs)
UpdateWidget(widgetId, customState)	OnCustomizationRequested(WidgetCustomizationRequestedArgs)
AddWidget(widgetName, widgetCreateDelegate)	GetTemplateForWidget()
	GetDataForWidget()

comentsys.com/packages/toolkits

Generative AI

Overview

Generative AI

Reduce time and effort leveraging AI models to assist generating new ideas, automate content creation or format information efficiently

Features:

- Leverage models trained on extensive datasets of various content
- Learn patterns and structures within data to grasp context
- Generate new content based on training
- Fine-tune output with prompts

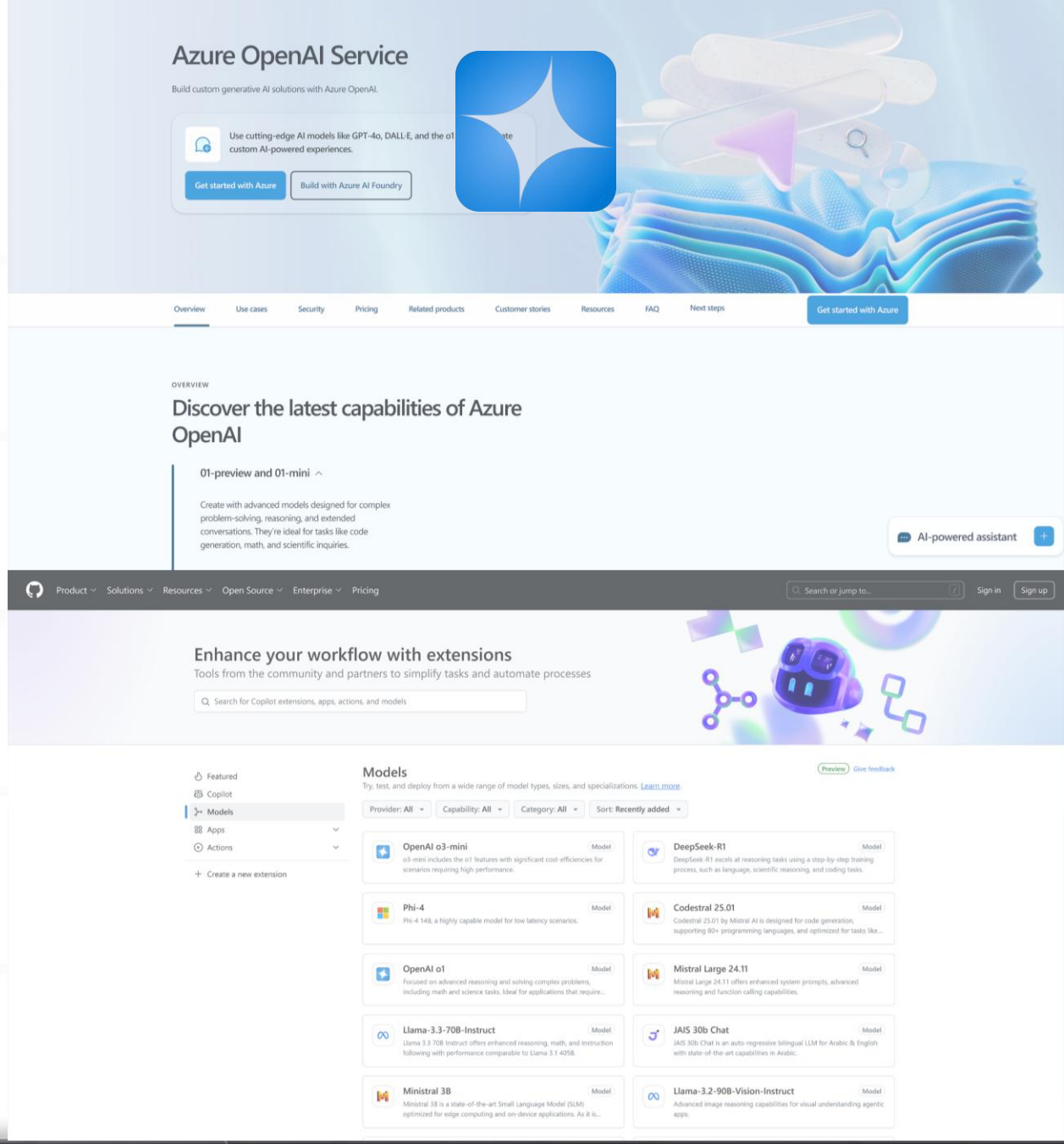
Azure OpenAI

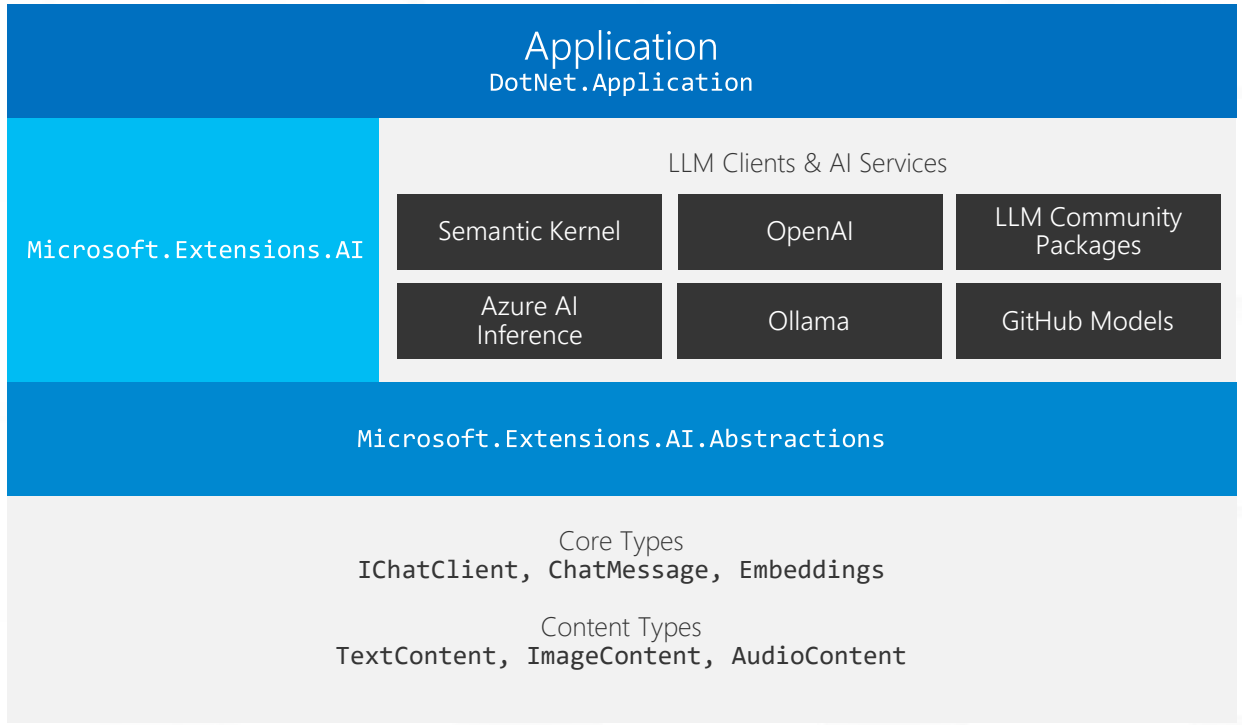
Generative AI

Provides access to powerful language models from OpenAI to be integrated into applications such as for content generation

Features

- Create innovative and state-of-the-art intelligent applications
- Offers REST API access & integration with Azure AI Foundry
- Leverage full power & experiment with OpenAI models
- azure.net & github.com/marketplace/models





Microsoft.Extensions.AI

Generative AI

Simplifies AI integration for .NET applications by providing a unified set of abstractions for interacting with various AI services

Features:

- Eases of integration of AI services across various providers
- Goal to provide implementations for common tasks
- Supports OpenAI, Azure AI Inference & Ollama
- Available from NuGet in Preview

Demo

Prompt Widget
🌟 Generative AI for Windows Widgets 🌟
✨ Dive into dynamic widgets powered by AI:
1. Envision purpose and scope.
2. Leverage AI for adaptive content.
3. Iterate with user feedback.
🚀 Craft captivating Windows Widgets with AI!

Summary

Widgets

Widgets provide easy-to-use dynamic or interactive access to information at-a-glance using Adaptive Cards

Adaptive Cards

Adaptive Cards delivered by a Widget Provider are created with JSON schema, designer or by using Generative AI

Widget Provider

Widget Providers can be easily implemented in Windows App SDK and can be powered with Generative AI

Generative AI

Generative AI can be easily used in applications with Microsoft.Extensions.AI implementations

Microsoft

Reactor

Thank You!

Q&A

github.com/rogueplanetoid/developingwindowswidgets

linkedin.com/in/rogueplanetoid