



Programming with AI: The Human Edge in an AI-Driven World



About me

- **Briefly:**
 - From Ural region
 - More than 8 years in development
- **Professional interests:**
 - Web API development
 - Reactive systems
 - Observability
 - C#/F#
 - Roslyn
- **Hobby:**
 - Smart home
 - Applicable AI
 - Arch Linux



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AI as a Power Tool for Devs

Modern AI models significantly enhance developer capabilities in several key areas:

- **Unmatched Speed & Efficiency:** AI rapidly generates boilerplate code (e.g., data access layers, unit test skeletons), automates routine tasks, and accelerates prototyping.
- **Large-Scale Code Comprehension:** Maintains long context (e.g., GPT-4, Gemini) to effectively process large codebases or documentation, assisting in reviews and refactoring complex scripts.
- **Accelerated Learning & Ideation:** Helps developers quickly grasp new technologies with instant examples/explanations and supports rapid prototyping of ideas.
- **Democratising Development:** Lowers the entry barrier, enabling more people to build applications with AI assistance, often via natural language.

Layoffs, Re-skilling, Reality

Company	Announced	Affected (Approx.)	Stated Reason / AI Link (Focus on Developers)
Microsoft	May 2025	~6,000 (many dev roles)	Restructuring for AI focus; boosting efficiency. Some laid-off engineers were previously encouraged to adopt AI for coding. (Source)
IBM	Early 2025 & ongoing	8,000+ (various roles)	"Workforce rebalancing" to free up capital for AI investment; AI replacing back-office roles. <i>Developer impact often indirect via restructuring towards AI skills.</i>
Autodesk	Feb 2025	~1,350 (9% of staff)	Restructuring to "accelerate investments in AI and cloud technologies"; shifting resources, implying changes in needed developer skillsets.
CrowdStrike	May 2025	~500 (5% of staff)	CEO: "AI flattens our hiring curve"; AI-driven efficiencies impacting future hiring needs, including developers.

Note: Figures and reasons based on public reports. The direct replacement of developers by AI is a complex, evolving narrative.

Is Coding Really Over?

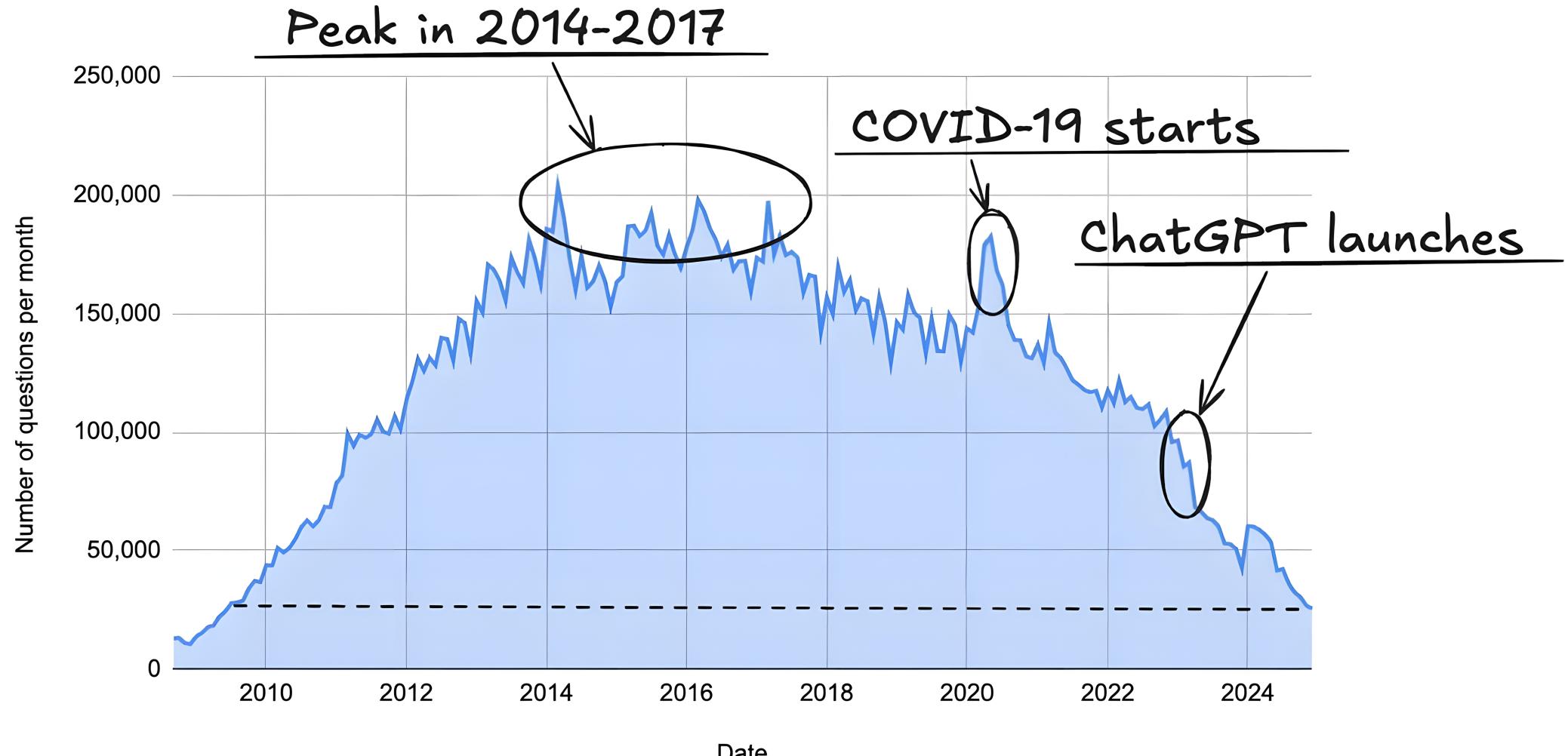
Amidst workforce changes, pronouncements from tech leaders paint a picture of AI rapidly dominating software development:

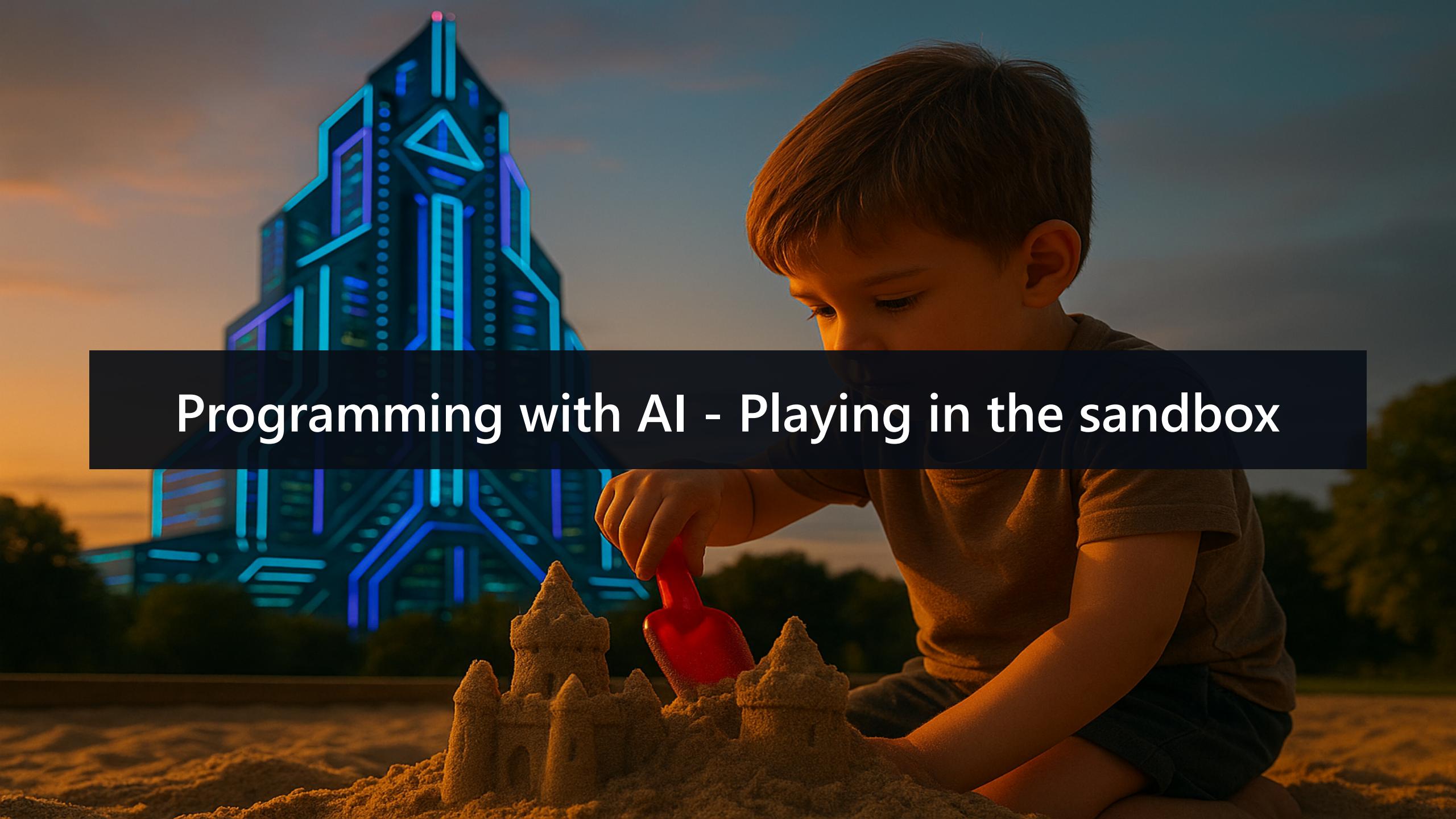
- Dario Amodei (CEO, Anthropic), [March 2025](#): *Predicted AI will write "90% of the code" in 3-6 months, and "essentially all of the code" in 12 months.*
- Sam Altman (CEO, OpenAI), [March 2025](#): "Maybe we do need less software engineers." (Also noted AI is "probably past 50% now" for writing code in many companies).
- Mark Zuckerberg (CEO, Meta), [Jan/Feb 2025](#): *Indicated AI engineers would build much of Meta's code, potentially acting as "mid-level engineers."*
- Amjad Masad (CEO, Replit), [March 2025](#): Stated, "I no longer think you should learn to code."

Additional context: OpenAI's CFO also announced (Apr 2025) development of "A-SWE", an AI agent to holistically replace software engineers.

StackOverflow is dying

Monthly questions asked on StackOverflow



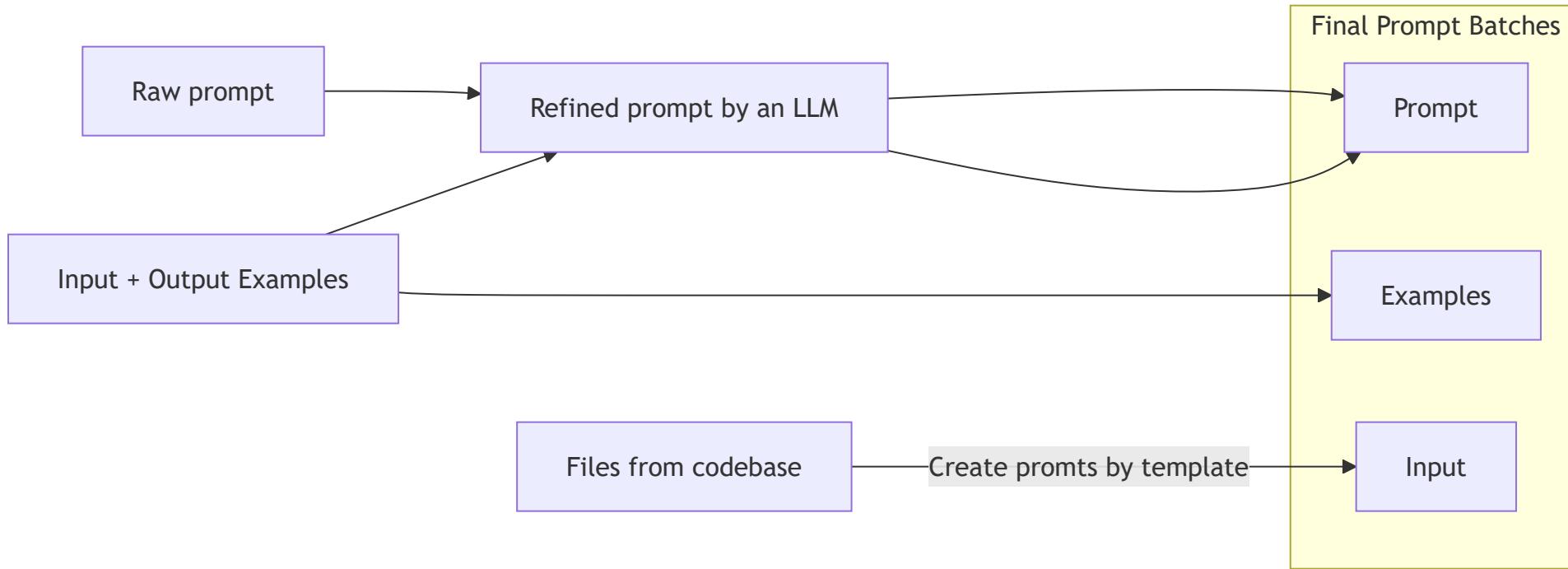


Programming with AI - Playing in the sandbox

Level 0 - Using LLMs in chat mode

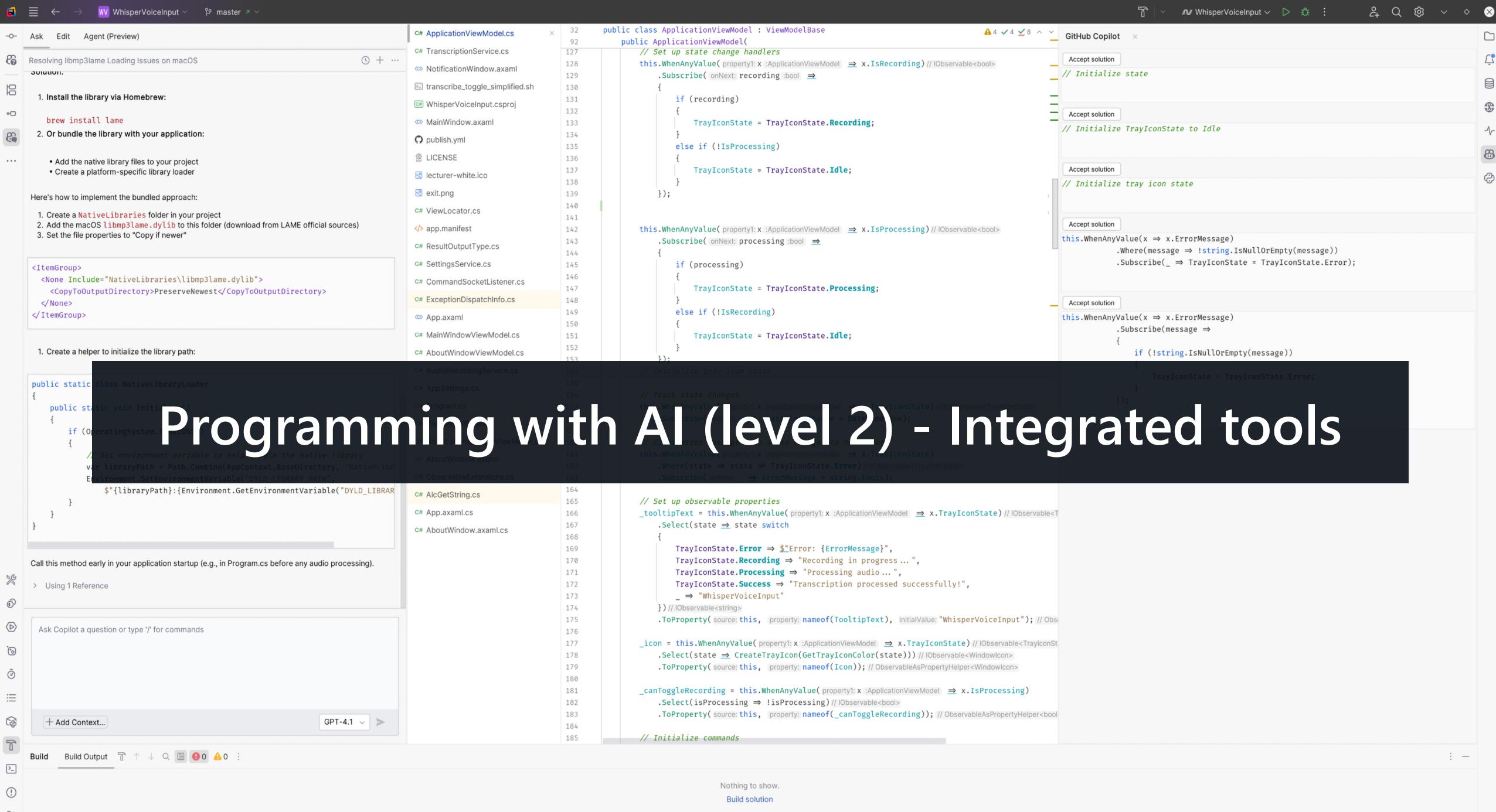
- Ask for technology/library/framework usage examples
- Use basic prompt engineering
 - Zero-Shot Prompting
 - "*Replace all service-locator usages for constructor injection*"
 - "*Write unit tests for the class with NUnit*"
 - One-Shot Prompting
 - "*Using style of provided unit-tests analyse equivalence classes of all input parameters of the method X and extend code coverage*"
 - Few-Shot Prompting
- Don't forget to reset context (create new chat)
- Decompose your task for multiple prompts
- Use structured outputs (JSON)

Level 0 - Refactoring example



Level 1 - Auto-completion

```
0 references | 0 changes | 0 authors, 0 changes
39     □
40     {
41         □
42             □
43                 context.Database.ExecuteSqlRaw("CREATE TABLE tasks (id INT PRIMARY KEY, title VARCHAR(50), priority INT)");
44             □
45         }
46     }
47     □
48
49
50
51
52
53
54
55
56
57
58
59     □
60
```



Simple task automation

- Tools examples:
 - GitHub Copilot Edits (in non agentic mode)
 - JetBrains AI assistant
 - Aider
- Advantages
 - Can include context
(files from code-base, console output, git diff)
 - Some tools can provide voice input capabilities
- Covered task scope
 - Isolated code changes
 - Git commit message generation
 - Git diff review
 - Tests generation
 - Documentation generation

The screenshot shows a code editor interface with several panes. On the left is a sidebar with icons for file operations like copy, paste, search, and refresh. The main area has two panes: one for 'CHANGES' showing a commit message and a list of files, and another for 'docker-compose.yml (Index)' showing the configuration file content.

CHANGES pane:

```
Message (Ctrl+Enter to commit on "master")
```

Commit button (9612)

Changes list:

- > .vscode
- > models
- > models_copy
- > searxng
- > speaches_cache
- > text-generation-inference-data
- > vllm_cache
- > .env
- feat: docker-compose.yml
- litellm_config.yaml

docker-compose.yml pane:

```
services:
  ollama:
    image: ollama/ollama:0.6.2 # https://hub.docker.com/r/ollama/ollama
    ports:
      - 1260:11434
    volumes: # https://github.com/ollama/ollama/blob/main/docs/faq.md#how-to-set-up-a-local-development-environment
      - ./llama_code:/code
      - ./ollama/ollama:/root/.ollama
    container_name: ollama
    pull_policy: always
    tty: true
    restart: on-failure:0
  environment: # https://github.com/ollama/ollama/issues/2941
    - OLLAMA_KEEP_ALIVE=5m
    - OLLAMA_HOST=0.0.0.0
    - FLASH_ATTENTION=true
    - OLLAMA_ORIGINS=moz-extension://*,chrome-extension://*,safari-wel
  # OLLAMA_DEBUG=1
deploy:
  resources:
    reservations:
      devices:
        - driver: "nvidia"
          capabilities: [gpu]
          device_ids: ["0"] # temporary
  networks:
    - ollama-docker
```

ollama-webui:

```
image: ghcr.io/open-webui/open-webui:0.5.20 # https://github.com/o
container_name: ollama-webui
volumes:
  - ./ollama/ollama-webui:/app/backend/data
depends_on:
  - ollama
ports:
  - "1261:8080"
environment: # https://docs.openwebui.com/getting-started/env-configuration
  OLLAMA_BASE_URLS: "http://ollama:11434" # comma separated ollama URLs
  ENV: "prod" # "dev"
  WEBUI_AUTH: "True"
  ENABLE_LOGIN_FORM: "True"
  WEBUI_NAME: "V0v1kkk AI"
  WEBUI_URL: "http://localhost:8080"
  WEBUI_SECRET_KEY: ${WEBUI_SECRET_KEY}
  ENABLE_RAG_WEB_SEARCH: "True"
  RAG_WEB_SEARCH_ENGINE: "searxng"
  RAG_WEB_SEARCH_RESULT_COUNT: "10"
  RAG_WEB_SEARCH_CONCURRENT_REQUESTS: "15"
  SEARXNG_QUERY_URL: "http://searxng:8080/search?q=<query>"
  AUDIO_STT_ENGINE: "openai"
  AUDIO_STT_OPENAI_API_BASE_URL: "http://speaches:8000/v1"
  AUDIO_STT_OPENAI_API_KEY: ${SPEACHES_API_KEY}
```

Copilot Edits Example

ApplicationViewModel.cs AppSettings.cs CommandSocketListener.cs ObservableExtensions.cs COPILOT EDITS CHAT ROO CODE ⌂ ⌃ + ×

WhisperVoiceInput > ViewModels > ApplicationViewModel.cs > ApplicationViewModel > ToggleRecordingAsync

```
32 public class ApplicationViewModel : ViewModelBase
235     private void SetError(string message)
236     {
237         ErrorMessage = message;
238         TrayIconState = TrayIconState.Error;
239         SetTemporaryStateWithTimeout(TrayIconState.Error, TimeSpan.FromSeconds(5));
240     }
241
242     private void SetSuccess()
243     {
244         TrayIconState = TrayIconState.Success;
245         SetTemporaryStateWithTimeout(TrayIconState.Success, TimeSpan.FromSeconds(5));
246     }
247
248     private async void SetTemporaryStateWithTimeout(TrayIconState state, TimeSpan duration)
249     {
250         // Store the state we're setting
251         var targetState = state;
252
253         // Remember when we set this state
254         var stateSetTime = DateTime.Now;
255
256         // Wait for the specified duration
257         await Task.Delay(duration);
258
259         // Only revert to idle if we're still in the same state that was set
260         // and no other state changes happened during the delay
261         if (TrayIconState == targetState && _lastStateChange?.Ticks >= stateSetTime.Ticks)
262         {
263             // Revert back to idle state if we're still in the temporary state
264             TrayIconState = TrayIconState.Idle;
265         }
266     }
267
268 }
```

1 reference

V0v1kkk

The application doesn't show a red icon for transcription errors (or at least it isn't noticeable). Fix the bug. You can find the desired behavior in the diagram in the readme file.

readme.md ApplicationViewModel.cs:399-433

GitHub Copilot

Fix for Error Icon Not Showing Properly

Looking at the readme diagram, I noticed that the application should show a red error icon for 5 seconds before reverting back to idle. Currently, the error state is set but never automatically reverted.

Step-by-Step Solution:

1. Add a method in `ApplicationViewModel` to handle temporary states
2. Modify the `SetError` and `SetSuccess` methods to use this temporary state handler
3. Ensure the state reverts to idle after 5 seconds

ApplicationViewModel.cs

Add a method to handle temporary states and update the `SetError` and `SetSuccess` methods to use it.

ApplicationViewModel.cs +22 -0

1 file changed

Keep Undo ↗

Add Files...

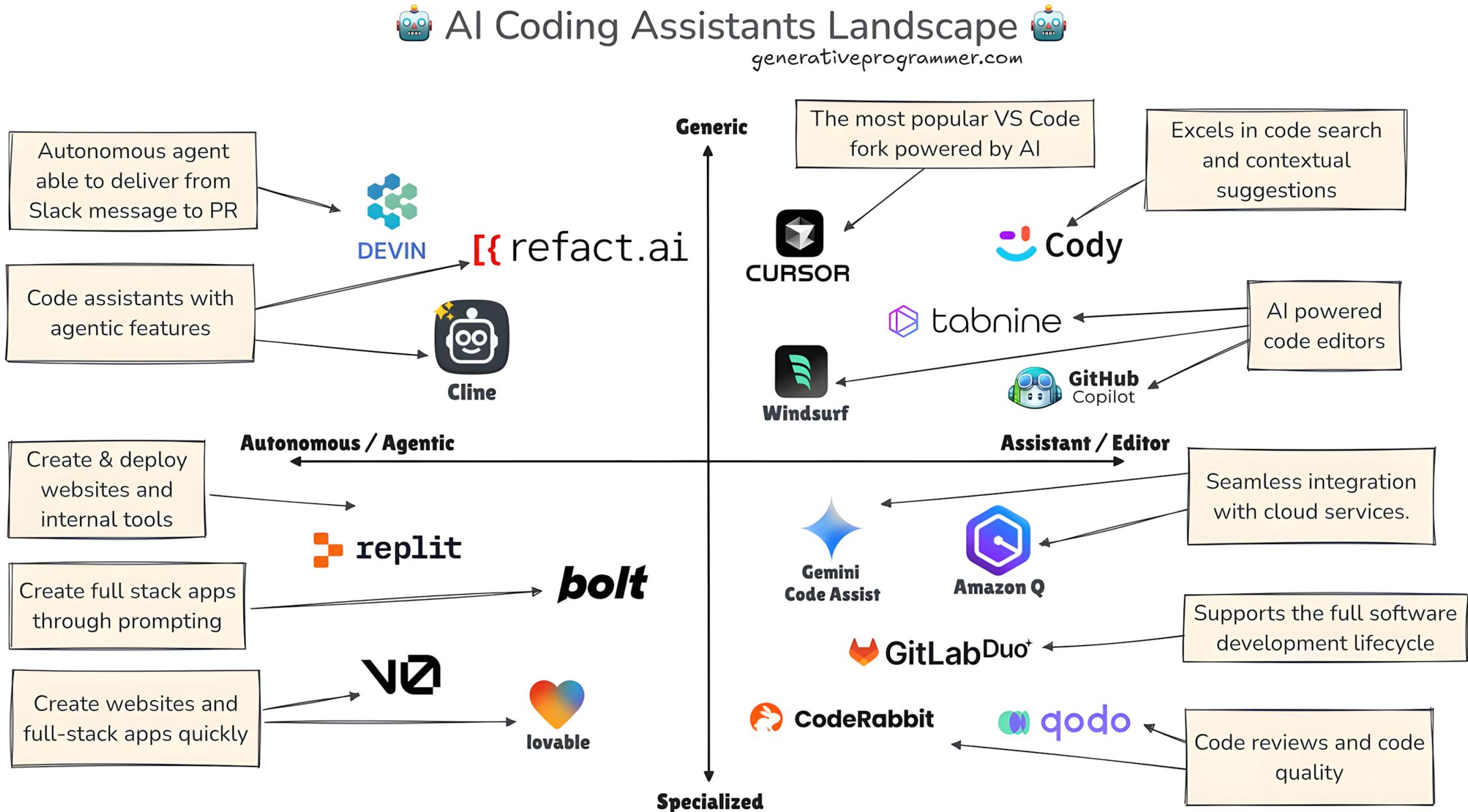
Edit files in your workspace

Claude 3.7 Sonnet Thinking ↗

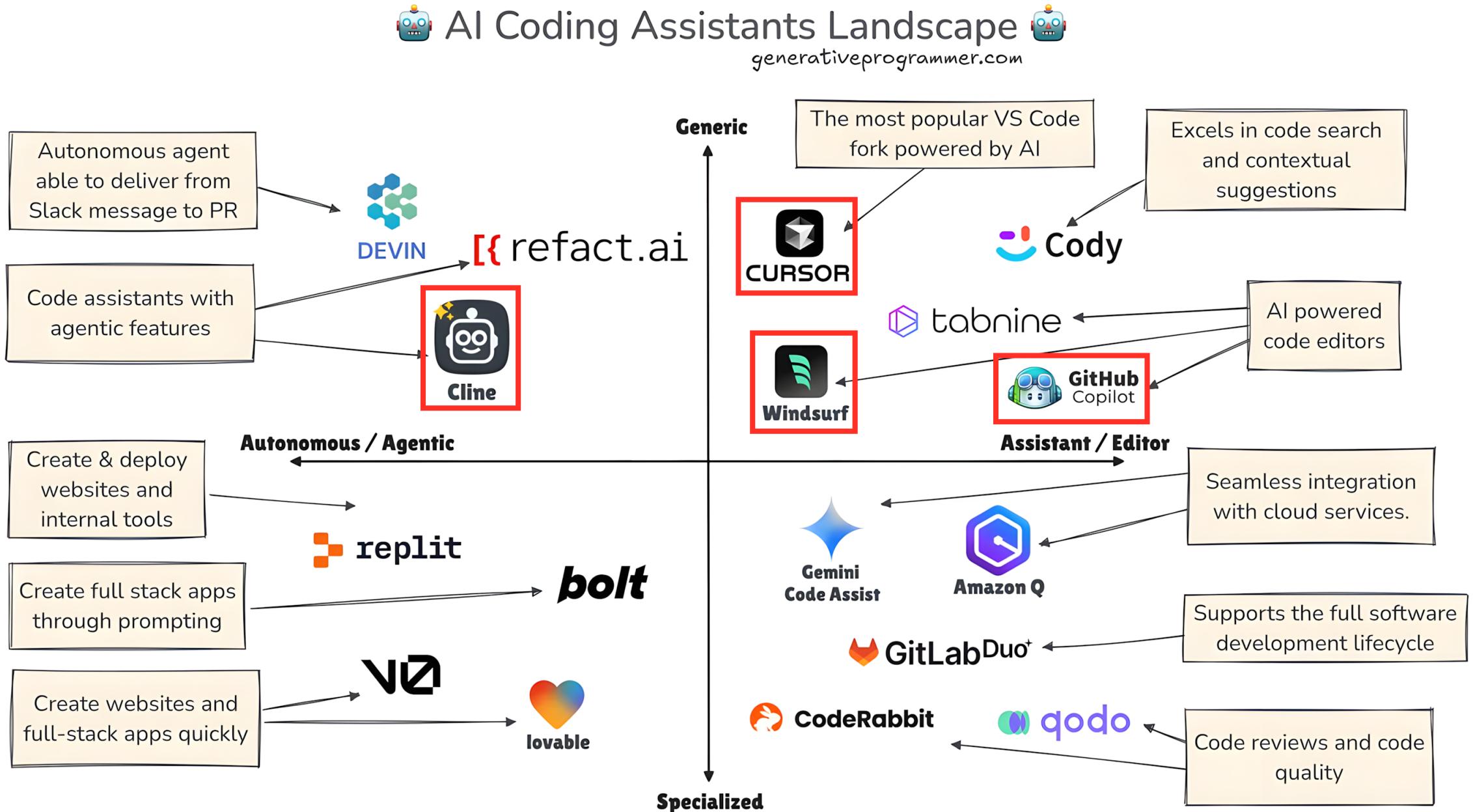
A black and white photograph of a group of men in dark suits and sunglasses, all looking upwards and slightly to the right. The man in the center foreground is wearing a camouflage hat.

Programming with AI (level 3) - Agentic tools

Complex task automation



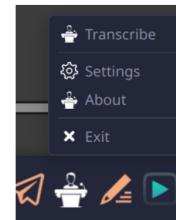
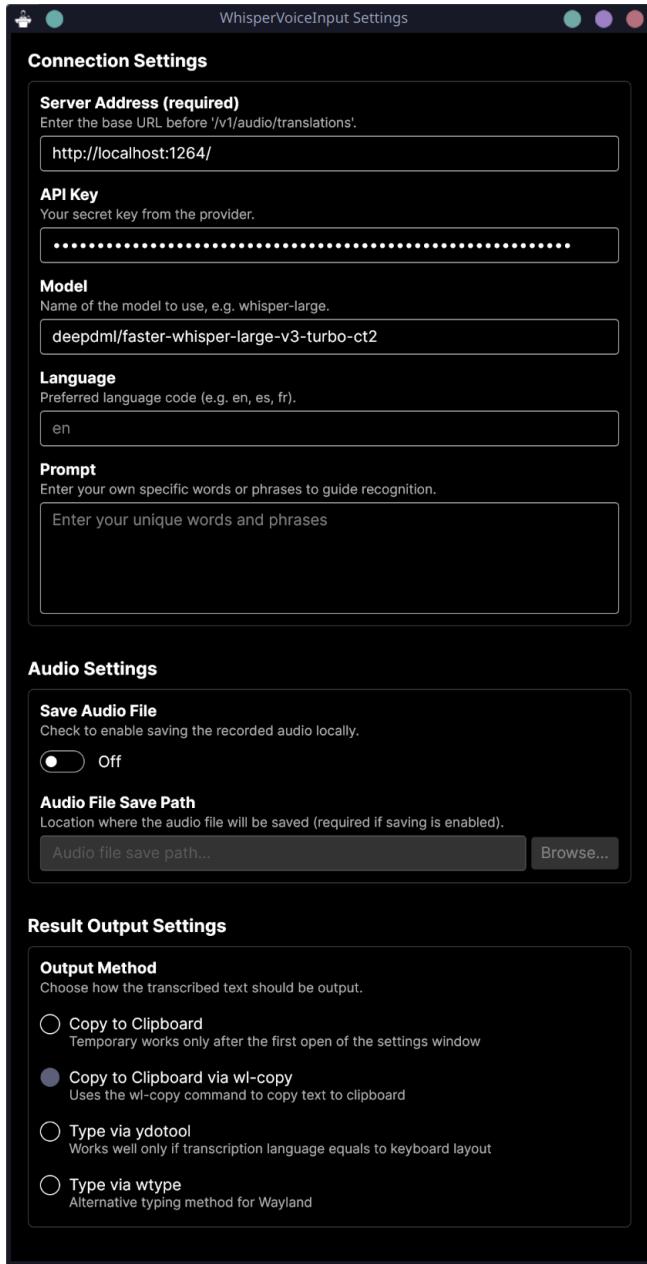
Complex task automation



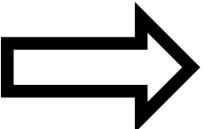
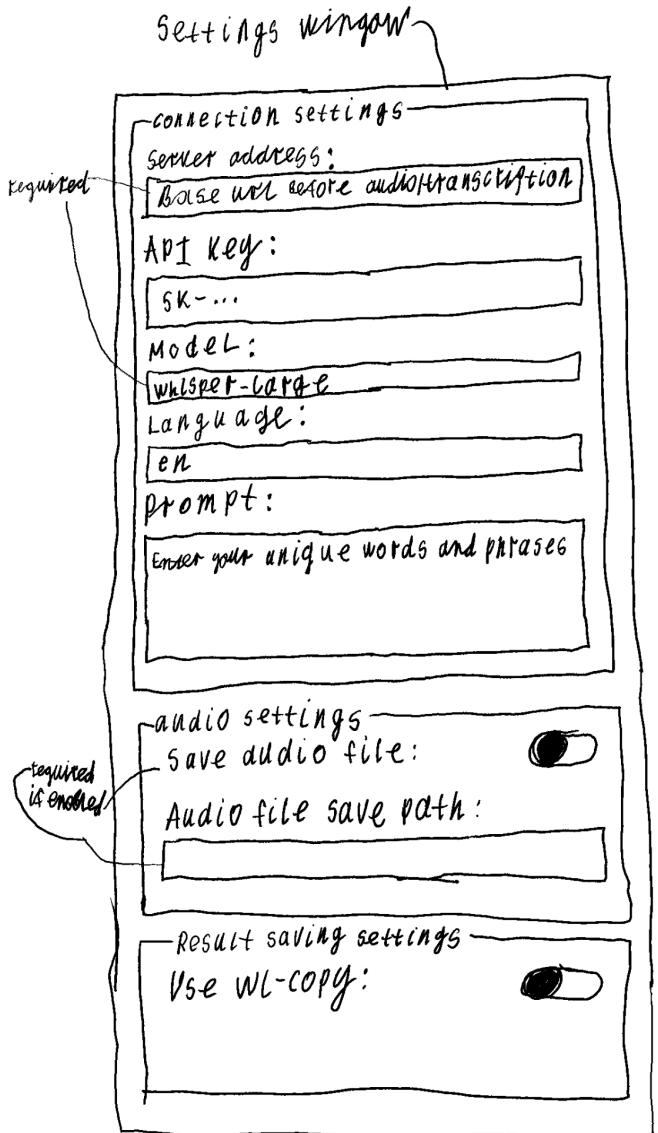
Cline AI assistant for VS Code



Building a new application for voice input - The concept

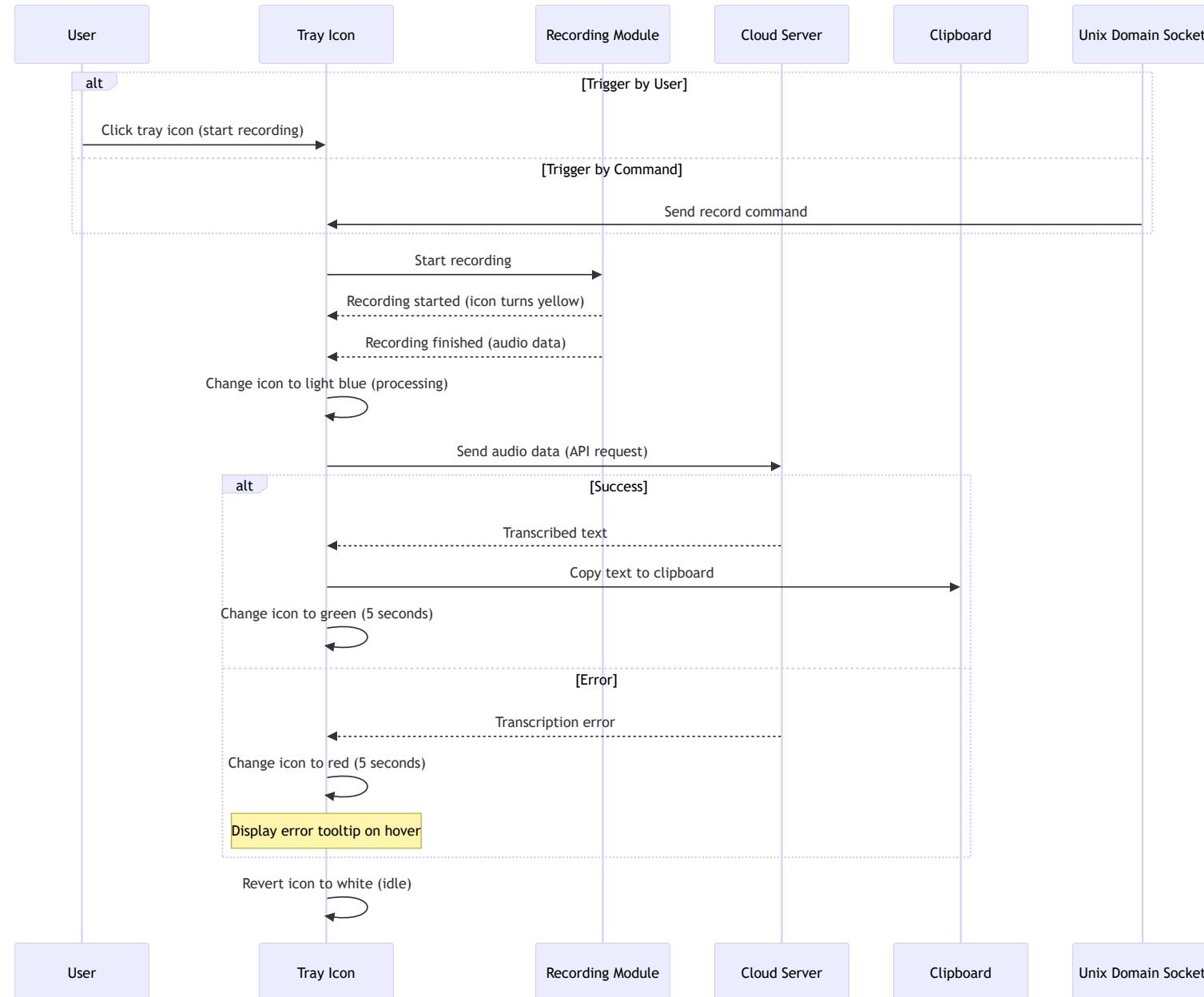


Building a new application for voice input - Fast markup



```
<Window xmlns="https://github.com/avaloniaui"  
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"  
        x:Class="VoiceInputApp.Views.SettingsWindow"  
        Title="Settings"  
        Width="450"  
        Height="600">  
  
    <!-- ScrollViewer to allow vertical scrolling -->  
    <ScrollViewer VerticalScrollBarVisibility="Auto">  
        <StackPanel Margin="15" Spacing="20">  
  
            <!-- Connection Settings -->  
            <HeaderedContentControl Header="Connection Settings">  
                <StackPanel Spacing="12">  
  
                    <!-- Server Address -->  
                    <StackPanel>  
                        <TextBlock Text="Server Address (required)"  
                                  FontWeight="Bold"/>  
                        <TextBlock Text="Enter the base URL before audio transcription."  
                                  FontSize="12"  
                                  Opacity="0.7"  
                                  Margin="0,0,0,4"/>  
                        <TextBox x:Name="ServerAddressTextBox"  
                                Watermark="Base URL before audio transcription"/>  
                    </StackPanel>  
  
                    <!-- API Key -->  
                    <StackPanel>  
                        <TextBlock Text="API Key"  
                                  FontWeight="Bold"/>  
                        <TextBlock Text="The secret key from the provider."  
                                  FontSize="12"  
                                  Opacity="0.7"  
                                  Margin="0,0,0,4"/>  
                        <TextBox x:Name="ApiKeyTextBox"  
                                Watermark="sk-..."/>  
                    </StackPanel>  
  
                    <!-- Model -->  
                    <StackPanel>  
                        <TextBlock Text="Model"  
                                  FontWeight="Bold"/>  
                        <TextBlock Text="Name of the model to use, e.g. whisper-large."  
                                  FontSize="12"  
                                  Opacity="0.7"  
                                  Margin="0,0,0,4"/>  
                        <TextBox x:Name="ModelTextBox"  
                                Watermark="whisper-large"/>  
                    </StackPanel>  
  
                    <!-- Language -->  
                    <StackPanel>  
                        <TextBlock Text="Language"  
                                  FontWeight="Bold"/>  
                        <TextBlock Text="Preferred language code (e.g. en, es, fr)."  
                                  FontSize="12"  
                                  Opacity="0.7"  
                                  Margin="0,0,0,4"/>  
                        <TextBox x:Name="LanguageTextBox"  
                                Watermark="en"/>  
                    </StackPanel>  
  
                    <!-- Prompt -->  
                    <StackPanel>  
                        <TextBlock Text="Prompt"  
                                  FontWeight="Bold"/>  
                        <TextBlock Text="Enter your own specific words or phrases to guide recognition."  
                                  FontSize="12"  
                                  Opacity="0.7"  
                                  Margin="0,0,0,4"/>  
                        <TextBox x:Name="PromptTextBox"  
                                AcceptsReturn="True"  
                                Height="60"  
                                Watermark="Enter your unique words and phrases"/>  
                    </StackPanel>  
                </StackPanel>  
            </HeaderedContentControl>  
  
            <!-- Audio Settings -->  
            <HeaderedContentControl Header="Audio Settings">  
                <StackPanel Spacing="12">  
  
                    <!-- Save Audio File Toggle -->  
                </StackPanel>  
            </HeaderedContentControl>  
        </StackPanel>  
    </ScrollViewer>  
</Window>
```

Building a new application for voice input - Requirements description



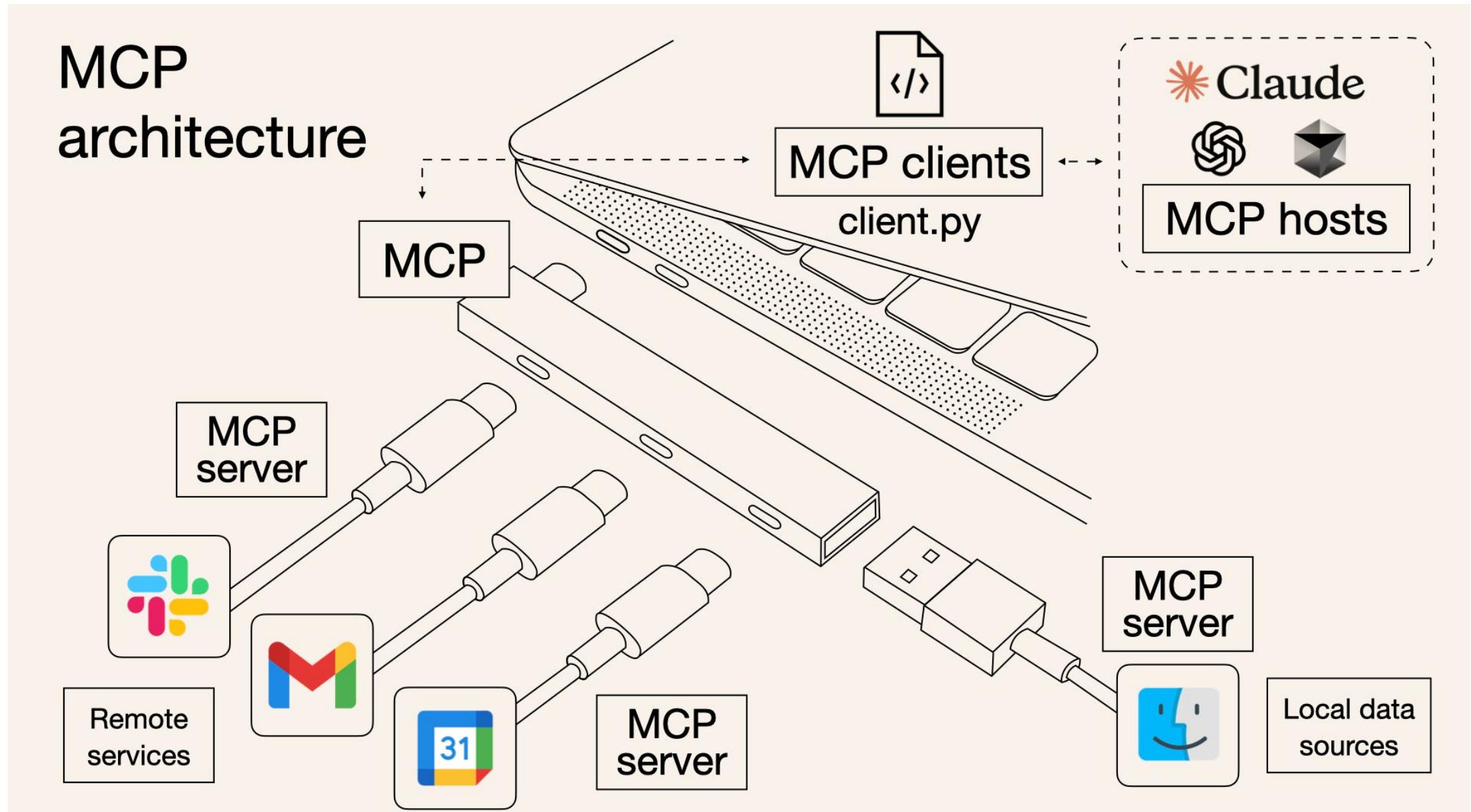
Building a new application for voice input - Takeaways

- Agentic coding tools are capable to write the outline of your application in case of guidance
- Voice input - must have. It speeds you up dramatically.
You literally tell AI what to do.
- Text-based diagrams and graphs like Mermaid, PlantUML, and GraphViz are rare ways to get the requirements across LLMs
 - It is possible to use LLMs with vision capabilities to transform hand-drawn drafts into diagrams



Programming with AI (level 3.1) - Extending Agents Capabilities

Model Context Protocol (MCP)

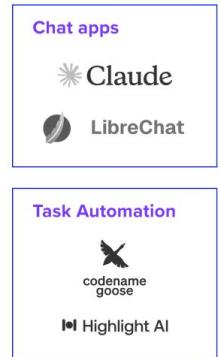


MCP is a Big Thing

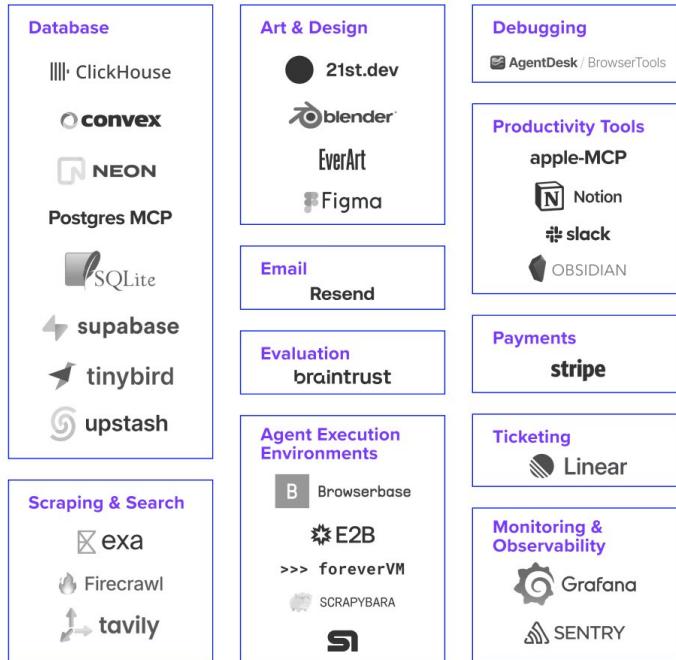
MCP Market Map

A work in progress.

Top MCP Clients



Top MCP Servers



MCP Marketplace



Server Generation & Curation



Server Hosting



Connection Management



Charts provided herein are for informational purposes only and should not be relied upon when making any investment decision. Past performance is not indicative of future results.
None of the above should be taken as investment advice; please see a16z.com/disclosures for more information.

Improving .Net development with MCP

Search for NuGet Packages

Request:

```
{  
  "SearchQuery": "Json",  
  "IncludePrerelease": false,  
  "PageNumber": 1,  
  "FullTextFiltersWithWildCardSupport": ["Newtonsoft*"]  
}
```

Response:

```
{  
  "Packages": [  
    {  
      "Id": "Newtonsoft.Json",  
      "Version": "13.0.3",  
      "Description": "Json.NET is a popular high-performance JSON framework for .NET",  
      "Authors": "James Newton-King",  
      "DownloadCount": 1250000000,  
      "Published": "2023-03-08T00:00:00Z"  
    },  
    {  
      "Id": "Newtonsoft.Json.Bson",  
      "Version": "1.0.2",  
      "Description": "Json.NET BSON adds support for reading and writing BSON",  
      "Authors": "James Newton-King",  
      "DownloadCount": 120000000,  
      "Published": "2020-01-01T00:00:00Z"  
    }  
  ],  
  "CurrentPage": 1,  
  "AvailablePages": [1]  
}
```

Request referenced assemblies

Request:

```
{  
  "ProjectFileAbsolutePath": "/home/user/Projects/MyApp/MyApp.csproj",  
  "PageNumber": 1,  
  "FullTextFiltersWithWildCardSupport": ["Avalonia*"]  
}
```

Response:

```
{  
  "AssemblyNames": [  
    "Avalonia",  
    "Avalonia.Controls.ColorPicker",  
    "Avalonia.Controls.DataGrid",  
    "Avalonia.Desktop",  
    "Avalonia.Diagnostics",  
    "Avalonia.Fonte",  
    "Avalonia.FreeDesktop",  
    "Avalonia.Native",  
    "Avalonia.ReactiveUI",  
    "Avalonia.Remote.Protocol"  
  ],  
  "CurrentPage": 1,  
  "AvailablePages": [1, 2]  
}
```

Improving .Net development with MCP

Request available namespaces

Request:

```
{  
  "ProjectFileAbsolutePath": "/home/user/Projects/MyApp/MyApp.csproj",  
  "AssemblyNames": ["Avalonia"],  
  "PageNumber": 1,  
  "FullTextFiltersWithWildCardSupport": ["*Media*", "*Image*"]  
}
```

Response:

```
{  
  "Namespaces": [  
    "Avalonia.Media",  
    "Avalonia.Media.Transformation",  
    "Avalonia.Media.TextFormatting",  
    "Avalonia.Media.TextFormatting.Unicode",  
    "Avalonia.Media.Immutable",  
    "Avalonia.Media.Imaging",  
    "Avalonia.Media.Fonts"  
  ],  
  "CurrentPage": 1,  
  "AvailablePages": [1]  
}
```

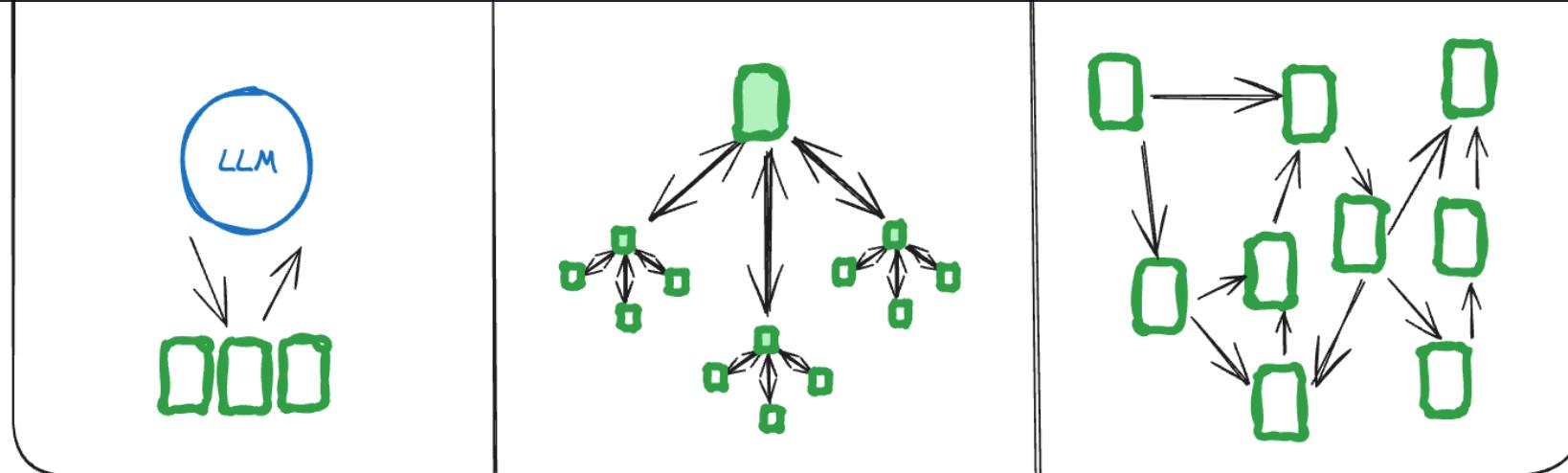
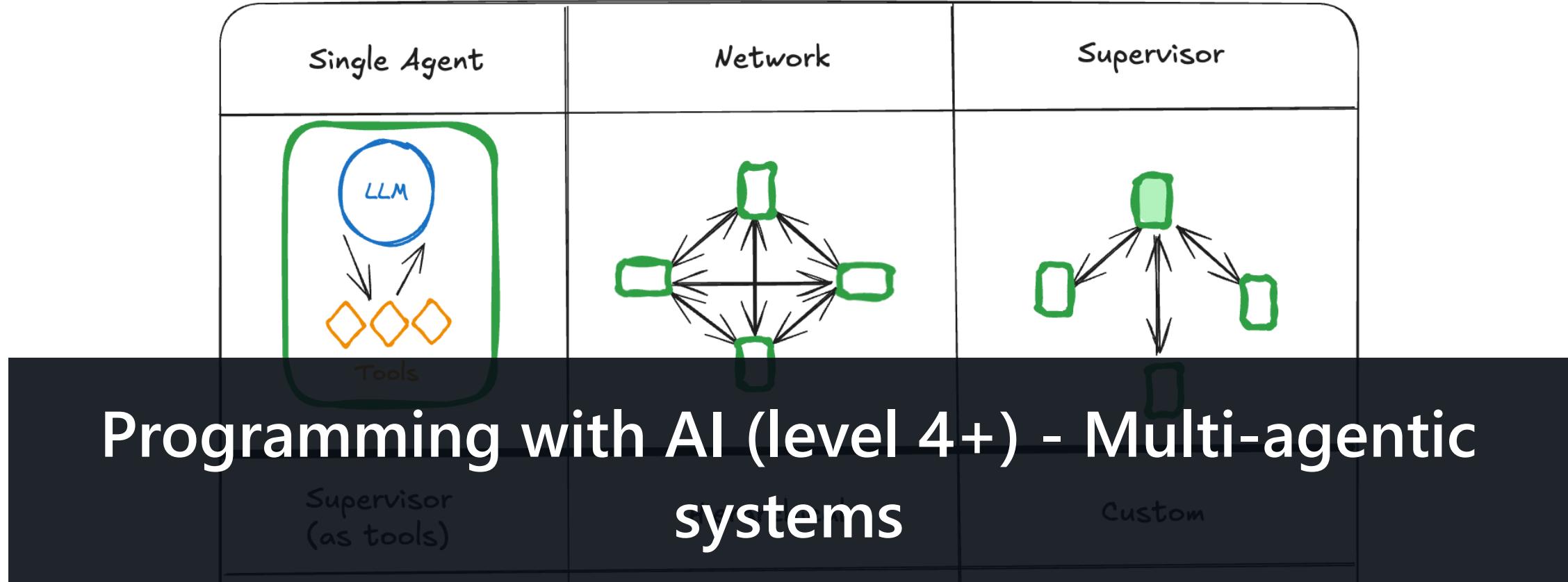
Request available types

Request:

```
{  
  "ProjectFileAbsolutePath": "/home/user/Projects/MyApp/MyApp.csproj",  
  "Namespaces": ["Avalonia.Platform"],  
  "PageNumber": 1,  
  "FullTextFiltersWithWildCardSupport": ["*Framebuffer*", "*Pixel*"]  
}
```

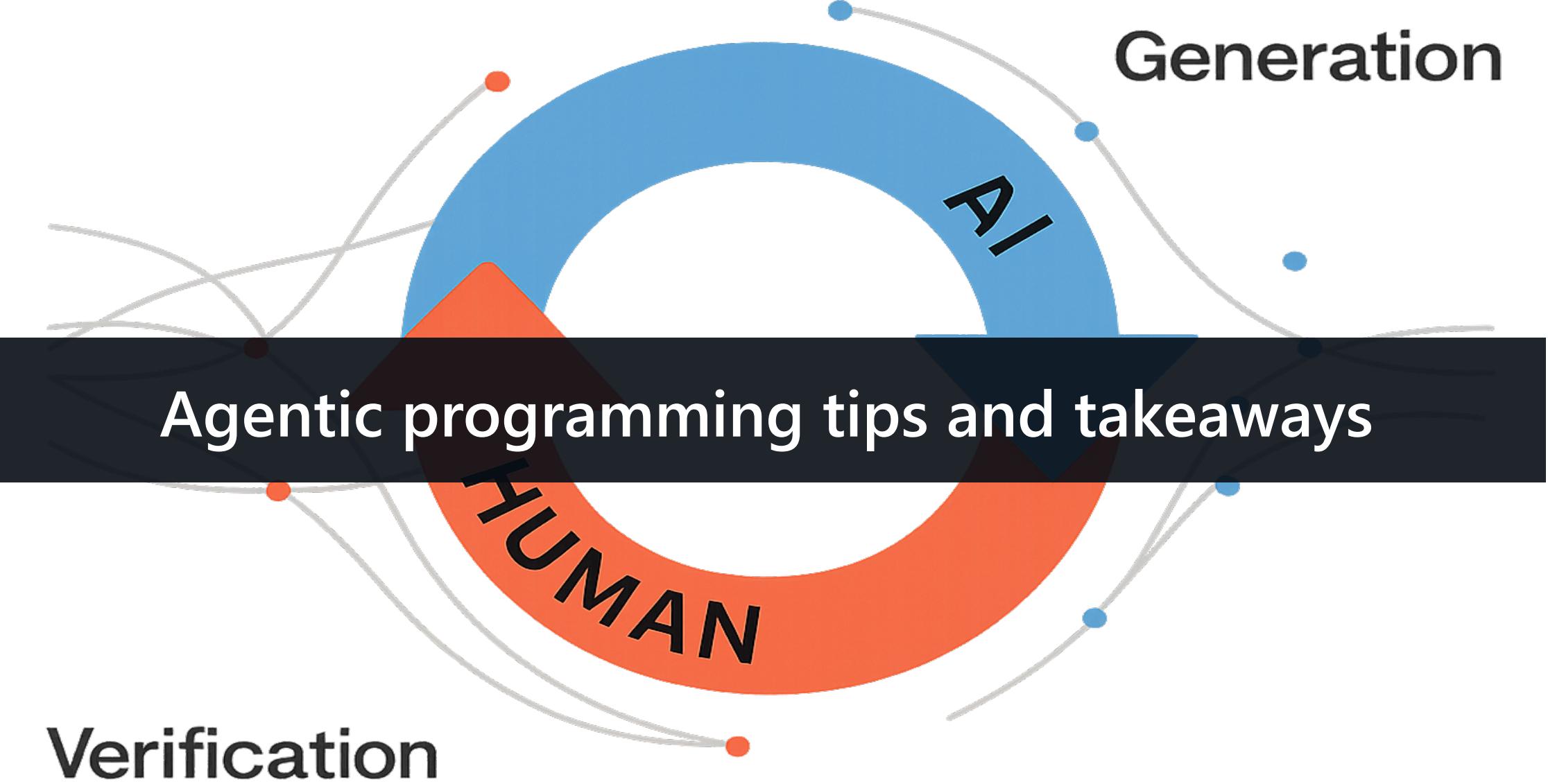
Response:

```
{  
  "TypeData": [  
    {  
      "FullName": "Avalonia.Platform.ILockedFramebuffer",  
      "Implements": ["IDisposable"],  
      "Methods": [  
        "abstract System.IntPtr get_Address()",  
        "abstract Avalonia.PixelSize get_Size()",  
        "abstract System.Int32 get_RowBytes()",  
        "abstract Avalonia.Vector get_Dpi()",  
        "abstract Avalonia.Platform.PixelFormat get_Format()"  
      ],  
      "Properties": [  
        "abstract System.IntPtr Address { get; }",  
        "abstract Avalonia.PixelSize Size { get; }",  
        "abstract System.Int32 RowBytes { get; }",  
        "abstract Avalonia.Vector Dpi { get; }",  
        "abstract Avalonia.Platform.PixelFormat Format { get; }"  
      ]  
    },  
    "CurrentPage": 1,  
    "AvailablePages": [1]  
  ]  
}
```



ChatDev Experiment





Agentic programming tips

- AI coding agents requires frequent feedback
- **DO NOT** enable auto-approve of changes
- Commit more often to be able to rollback to stable version
- Describe your project in `.cursorrules` / `.cursor/rules/` or `.github/copilot-instructions.md` / `.instructions.md` files
 - Project Requirements Document
 - App Flow Doc
 - Tech Stack & API Docs
 - Frontend Guidelines
 - Backend Structure
 - File Structure

Context builders

DeepWiki V0v1kkk/DotNetMetadataMcpServer

Get free priv

Last indexed: 26 June 2025 (1223c9)

Overview

Architecture

Core Processing Engine

MCP Server Infrastructure

Configuration System

Tool System

Assembly Tool

Namespace Tool

Type Tool

NuGet Tools

Data Models

Tool Request and Response Models

Services and Helpers

Filtering and Pagination

Logging and Adapters

Testing

Integration Tests

Unit Tests

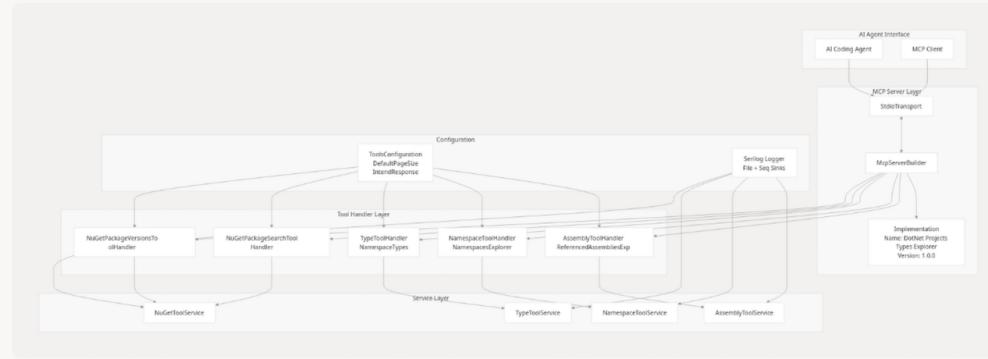
NuGet Integration Tests

Development Setup

High-Level System Architecture

The system follows a layered architecture built on the `ModelContextProtocol.NET` framework:

MCP Server and Tool Handlers

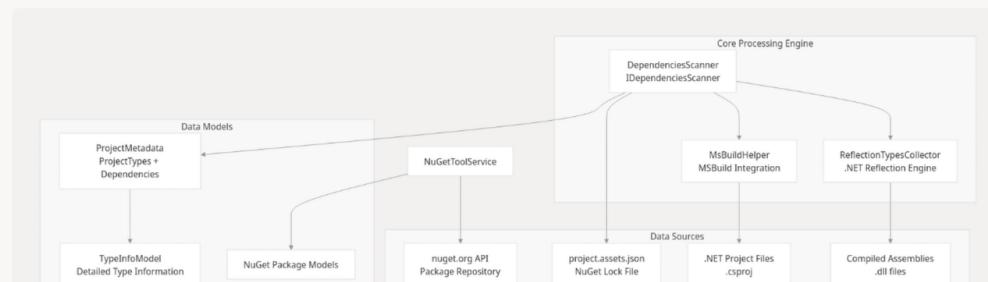


Sources: [Program.cs](#) 47-76

Core Processing Components

The system relies on three main processing components that handle .NET project analysis:

Core Analysis Engine



Task

Extened the current code to scrape the page `https://www.expats.cz/`

I want to see results in obsidian markdown format. Example:...

See more

Tokens: ↑ 10.1m ↓ 148.8k

Context Window: 116.2k  200.0k

API Cost: \$11.7661



5.37 MB

can you create a knowledgetransfer.md doc and put it in the project root?



✓ API Request \$0.4537

The user is asking me to create a knowledge transfer document (knowledgetransfer.md) in the project root. This document should summarize what we've learned about scraping expats.cz using the crawl4ai library, including the challenges we faced and the solutions we found.

I'll create a comprehensive document that covers:

- The initial approach and challenges
- The cookie consent issue and redirect problem
- The solutions we tried
- The final working solution
- Key insights about the page structure
- Best practices for using crawl4ai for this type of task

I'll create a knowledge transfer document that summarizes what we've learned about scraping expats.cz using the crawl4ai library:

📄 **Roo wants to create a new file:**

knowledgetransfer.md

Knowledge transfer tip

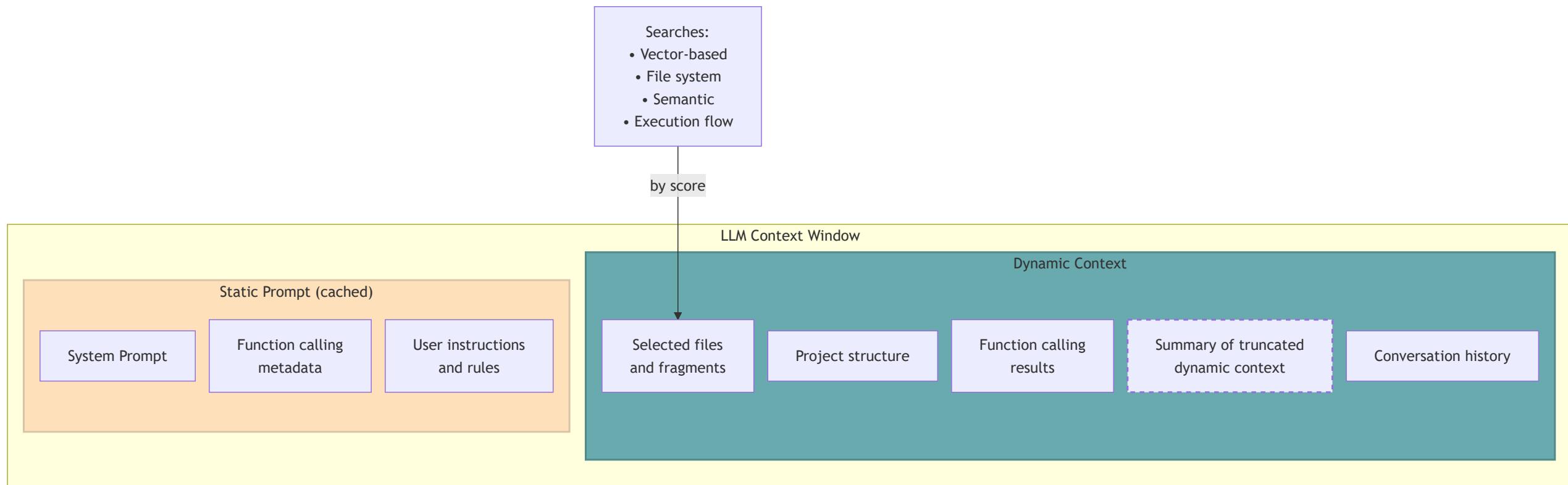
Agentic programming challenges



Fundamental LLM limitations

- Struggling with rare languages and technologies
- Hallucinations
- Attention mechanism nuances
- Misalignment of foundational models
- Limited context length

The Context Problem



The Context Problem - Pushing the limits

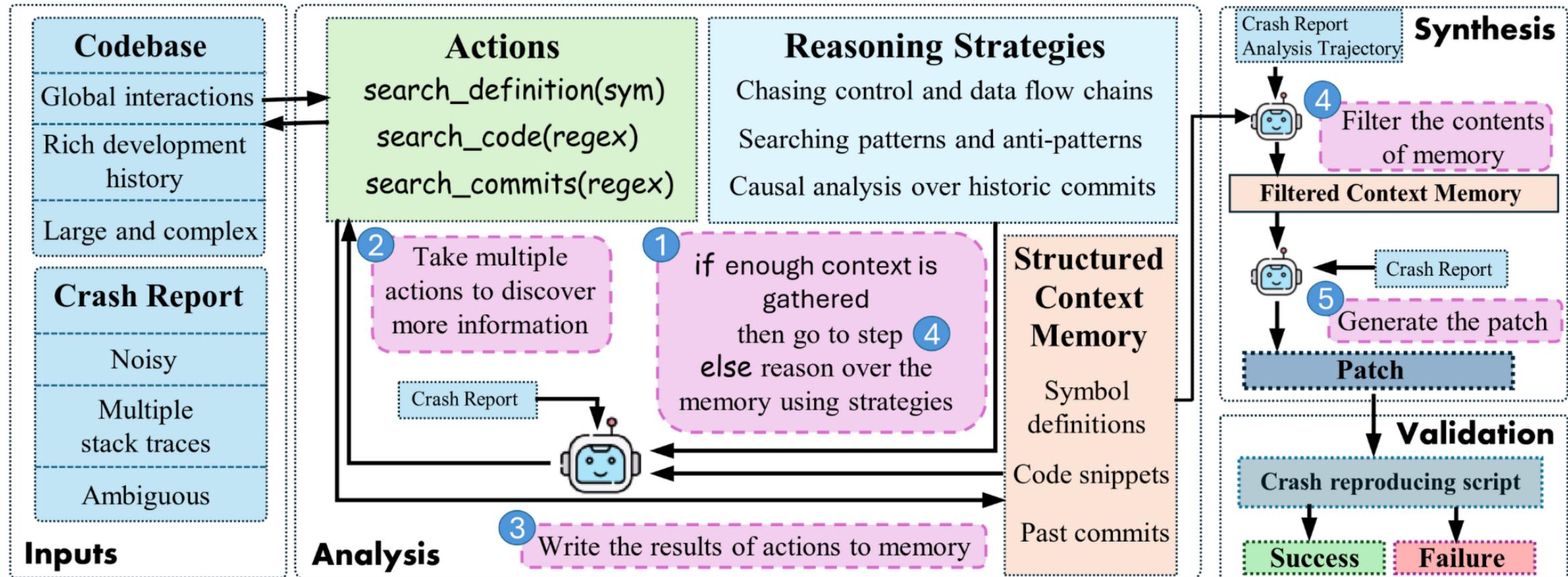


Figure 1: *Code Researcher* conducts deep research over code in three phases: (1) Starting with the codebase and crash report as input, the **Analysis** phase performs multi-step reasoning about semantics, patterns, and commit history of code. It gathers context in a structured memory. (2) The **Synthesis** phase filters the contents of the memory to keep relevant context and generates a patch. (3) The **Validation** phase uses external tools to validate the patch.

Vibe coding Pitfall



Andrej Karpathy

@karpathy



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There's a new kind of coding I call "vibe coding", where you fully give in to the vibes, embrace exponentials, and forget that the code even exists. It's possible because the LLMs (e.g. Cursor Composer w Sonnet) are getting too good. Also I just talk to Composer with SuperWhisper so I barely even touch the keyboard. I ask for the dumbest things like "decrease the padding on the sidebar by half" because I'm too lazy to find it. I "Accept All" always, I don't read the diffs anymore. When I get error messages I just copy paste them in with no comment, usually that fixes it. The code grows beyond my usual comprehension, I'd have to really read through it for a while. Sometimes the LLMs can't fix a bug so I just work around it or ask for random changes until it goes away. It's not too bad for throwaway weekend projects, but still quite amusing. I'm building a project or webapp, but it's not really coding - I just see stuff, say stuff, run stuff, and copy paste stuff, and it mostly works.

6:17 PM · Feb 2, 2025 · 4M Views



1.2K



3.9K



24K



12K



Vibe coding Pitfall



Vibe
coding



Vibe
debugging



leo ✅
@leojr94_

my saas was built with Cursor, zero hand written code

AI is no longer just an assistant, it's also the builder

Now, you can continue to whine about it or start building.

P.S. Yes, people pay for it

4:34 am · 15 Mar 2025 · 52.2K Views



leo ✅
@leojr94_

guys, i'm under attack

ever since I started to share how I built my SaaS using Cursor

random thing are happening, maxed out usage on api keys, people bypassing the subscription, creating random shit on db

as you know, I'm not technical so this is taking me longer than usual to figure out

for now, I will stop sharing what I do publicly on X

there are just some weird ppl out there

9:04 am · 17 Mar 2025 · 53.6K Views

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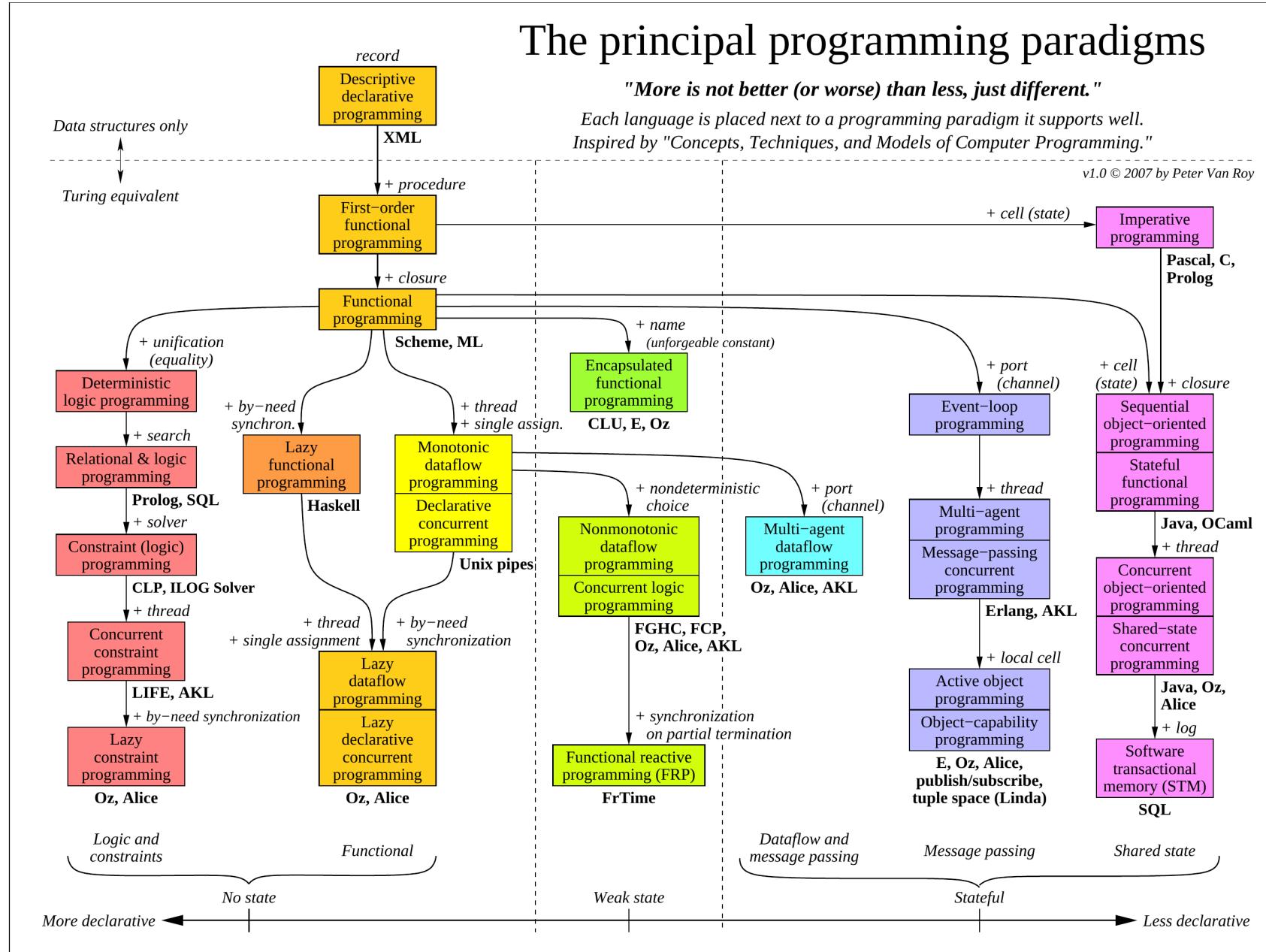
...

Where AI Still Struggles

- Security & Reliability Risks
- Creativity & Genuine Innovation
- Integration & System-Level Complexity

Conclusions

How to Keep Your Skills Relevant? - Hard Skills



How to Keep Your Skills Relevant? - Soft Skills



Thank you for your attention!

Questions?

Repository with the presentation
and links:



Links

- Prompt Engineering guides
 - [Google 1](#)
 - [Google 2](#)
 - [Anthropic](#)
 - [Prompt Engineering Guide](#)
- Agentic coding assistants
 - Github Copilot
 - [Customise AI responses in VS Code with custom instructions](#)
 - [Cline](#)
 - [github](#)
 - Cursor
 - [Cursor rules documentation](#)
- The WhisperVoiceInput tool
- Context builders
 - [DeepWiki](#)
 - [DeepWiki-Open](#)
 - [GitIngest](#)
- Model Context Protocol (MCP)
 - [Official site](#)
 - MCP servers catalogs
 - [mcp.so](#)
 - [Awesome MCP Servers](#)
 - [One more](#)
 - The MCP Servers
 - [.NET Types Explorer MCP Server \(by me\)](#)
 - [Semantrix \(by Renat Eskenin\)](#)
 - Materials by Microsoft
 - [Advancing Windows for AI development: New platform capabilities and tools introduced at Build 2025](#)
 - [Unlock agentic interactions for your apps using MCP on Windows session](#)
- Experimental multi-agentic programming tools
 - [ChatDev](#)
 - [Co-Saving](#)
 - [MapCoder](#)
- Scientific papers
 - [Code Researcher: Deep Research Agent for Large Systems Code and Commit History](#)