



Qdrant

MCP-code-snippets

Up-to-Date Code for AI Copilots
Through Semantic Context Lookup

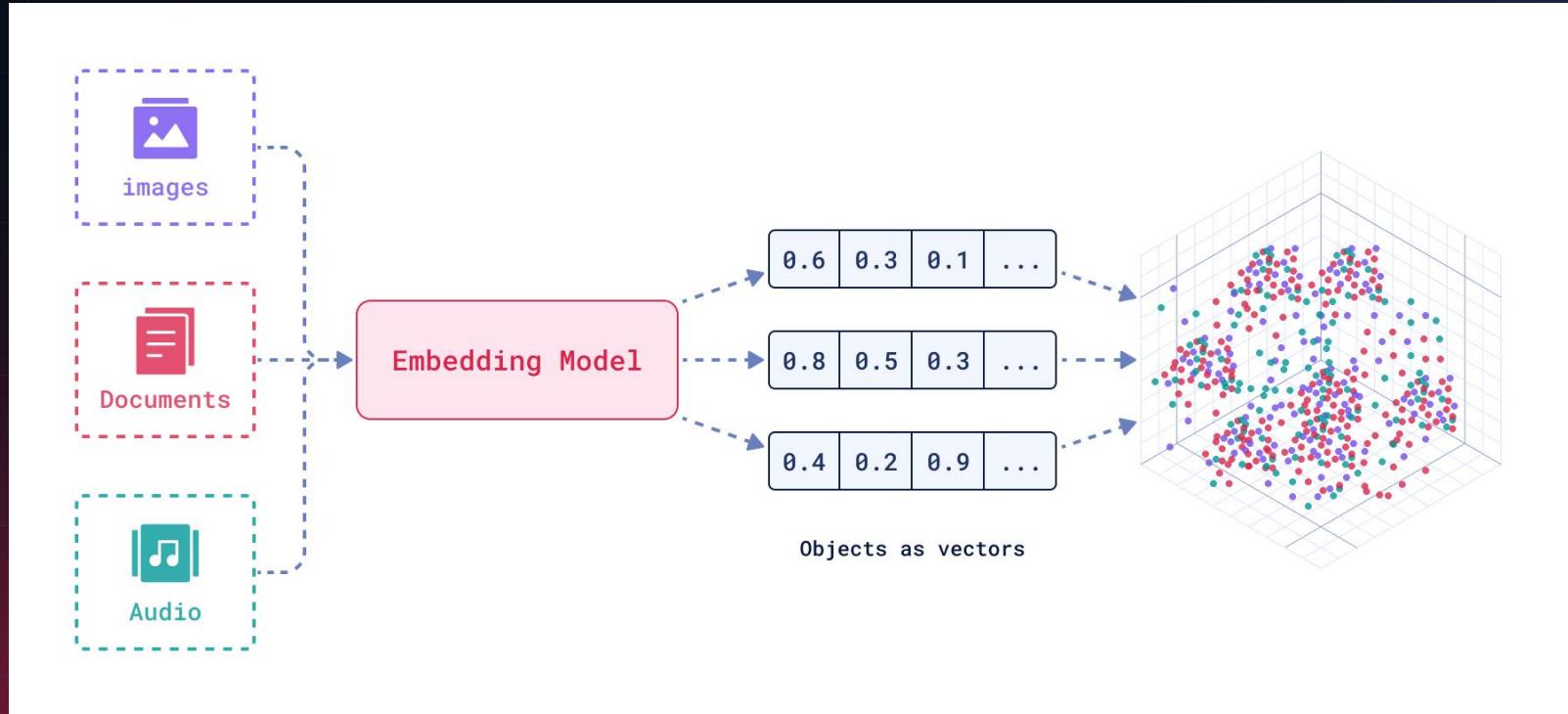


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& Till Bungert,

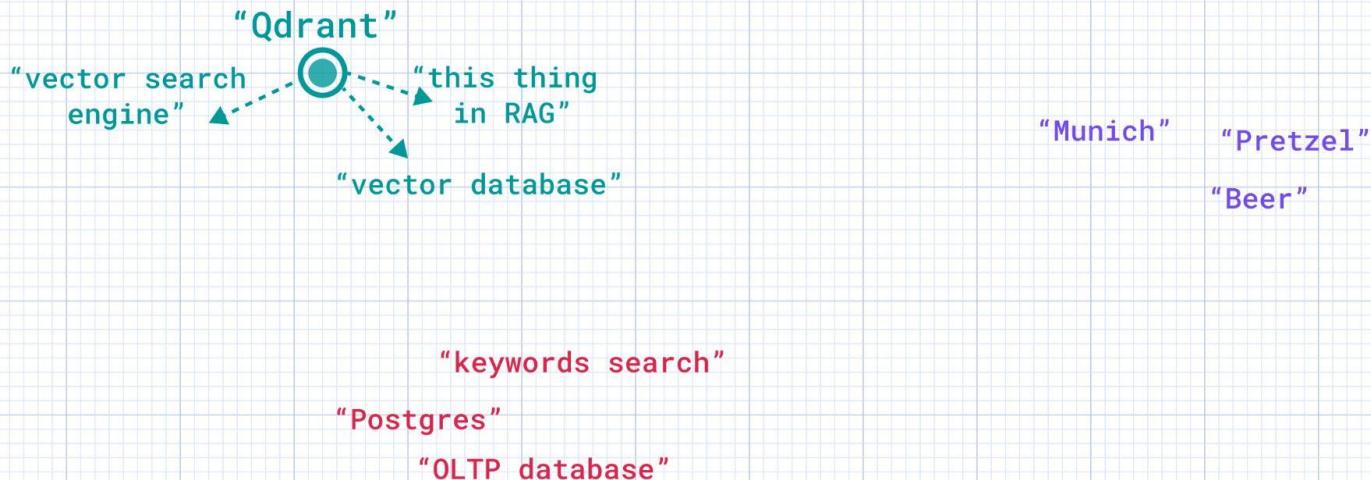
@Qdrant

**Qdrant is an open-source
Vector Search Engine
or you might have also heard
the term “*vector database*”,
“*semantic similarity search engine*”,
“*the thing under the hood of (Agentic) RAG*”, ...**

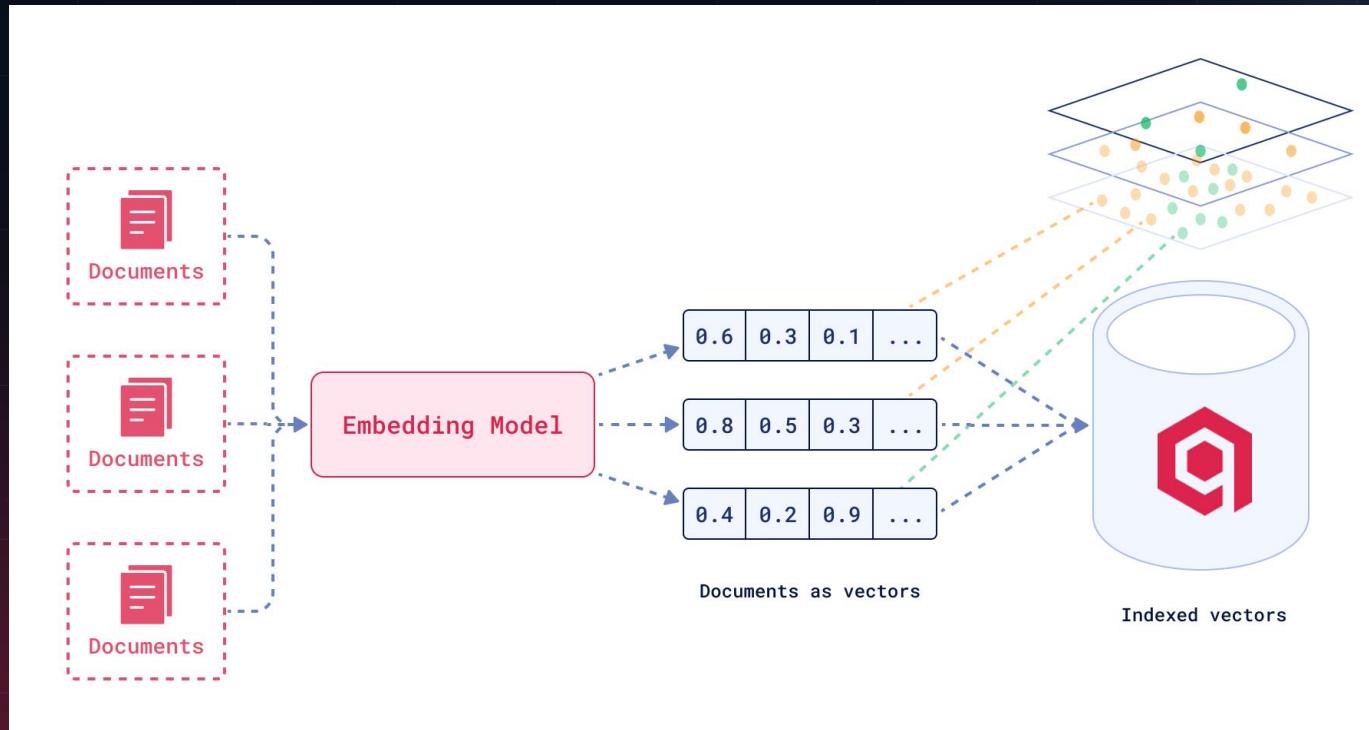
Qdrant is a **Vector Search Engine**



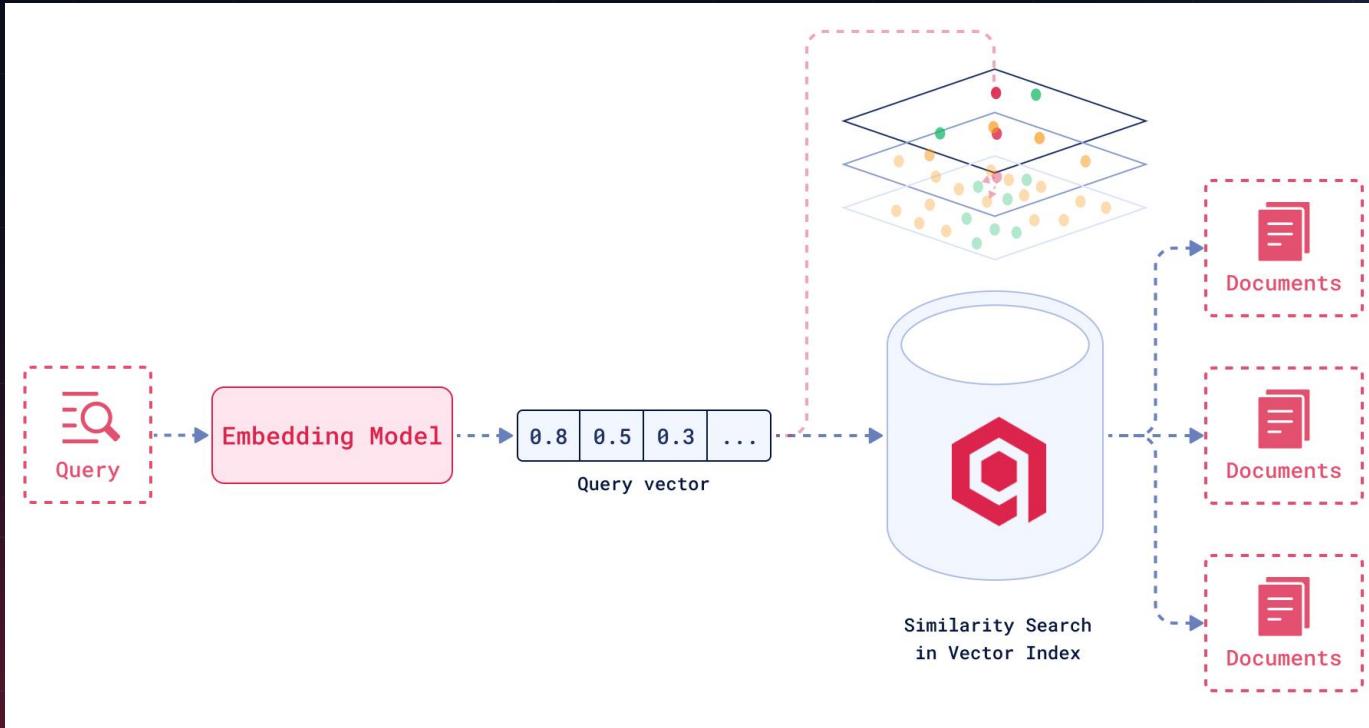
Qdrant is a Vector Search Engine



Qdrant is a Vector Search Engine: Store



Qdrant is a Vector Search Engine: Find



**So Qdrant can be Used
for Semantic Context
Lookup**

And AI Coding Assistants Need Context



User:

- *Implement hybrid (dense + lexical/mixed/keywords & vectors) search in Qdrant*



Coding Assistant:

- Uses deprecated method “search” instead of “query_points”;
- Doesn’t know Qdrant, since 1.10.0, supports multistage searches with “prefetch” & fusion;
- Doesn’t know Qdrant can calculate Inverse Document Frequency (IDF) on the server side;
- Doesn’t know about local & cloud inference...

=> People come & say: “*Qdrant doesn’t have hybrid search functionality*” A small orange icon of a person with a thinking bubble above their head.

And AI Coding Assistants Need Context

Why?

LLMs are retrained, but it's mostly **impossible to keep them** constantly **updated & in sync** with library versions.

Just our Qdrant code documentation covers:

- **Several clients** (Java, Python, GO, C#, Rust, Typescript);
- **Several versions** (1.16.2 now), each with new features.

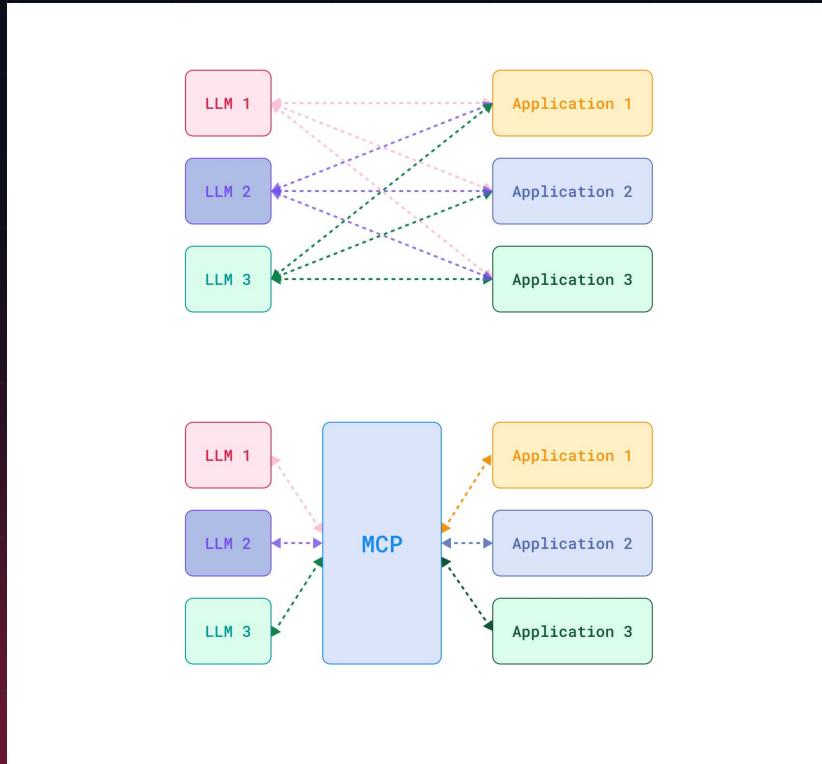
LLM-friendly API reference?

Yes, we have **/llm-full.txt** at our API Reference page, but it's big (**~53K tokens**) => Lost-in-the-middle effect.

How Can AI Coding Assistants Leverage Qdrant's Semantic Search?

Through an MCP Server

Model Context Protocol (MCP)



“MCP is an open protocol that standardizes how applications provide context to LLMs.”

“Think of MCP like a USB-C port for AI applications.”

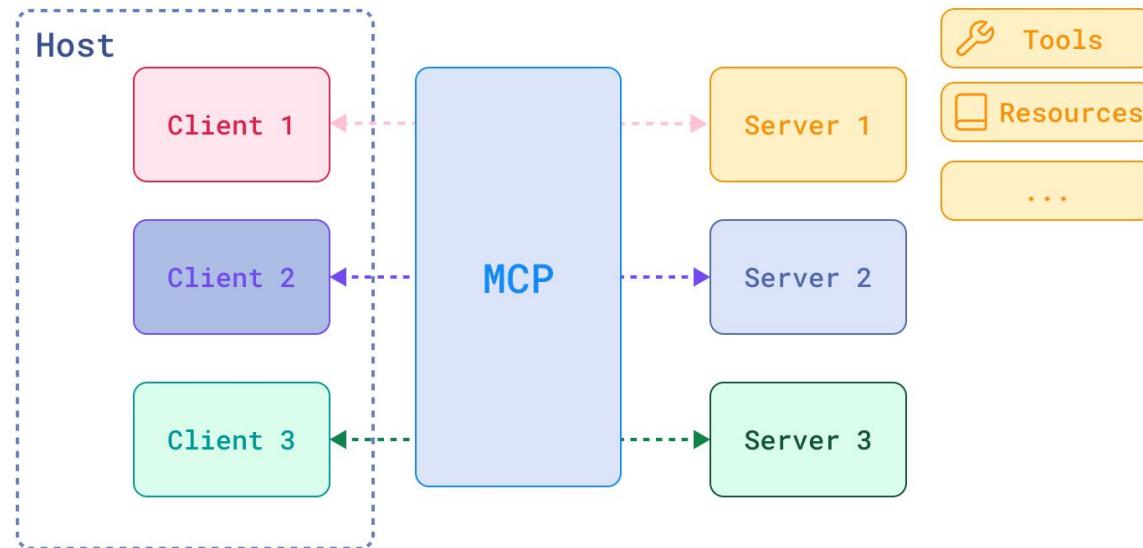


modelcontextprotocol.io

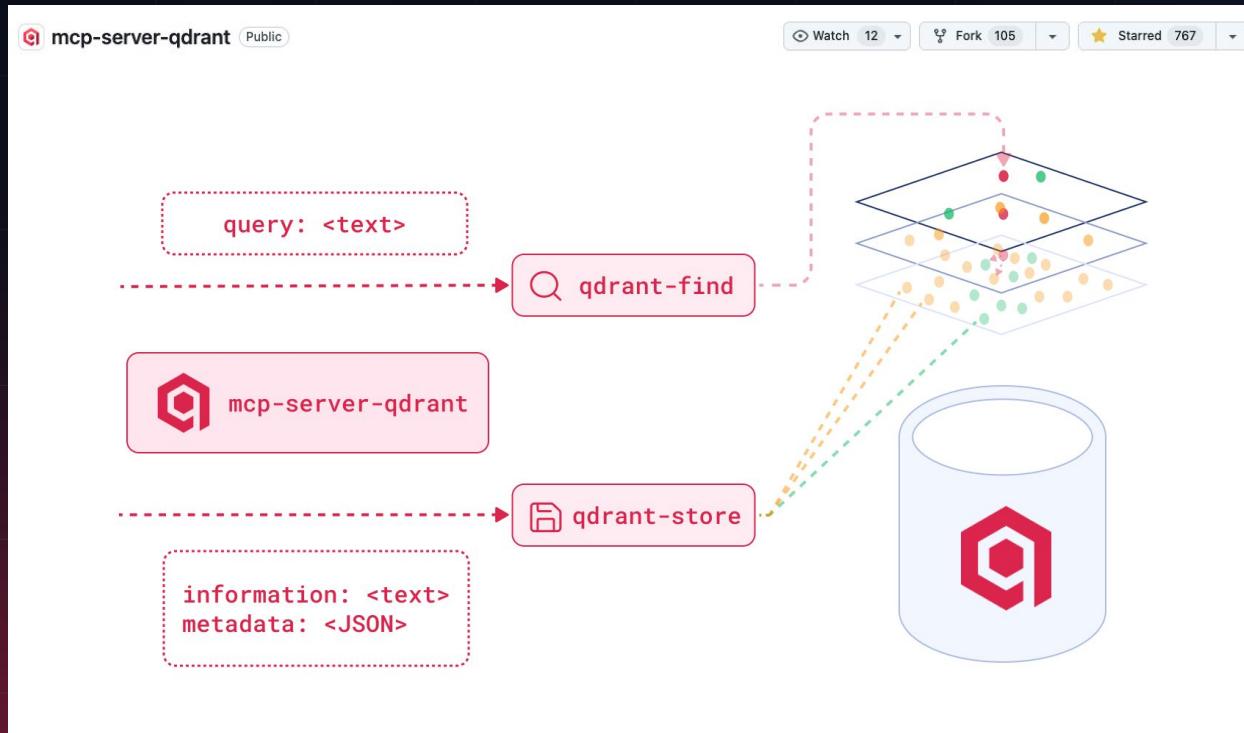


HuggingFace MCP course

Model Context Protocol (MCP)



Qdrant MCP Server



mcp-server-qdrant



Possible Applications

- Inline Retrieval-Augmented Generation (RAG)
<originally used as a note-taker>;
- Automating your codebase documentation;
- Personalizing your code assistant with
best practices, templates,
and specifics of your codebase;
- **Providing up-to-date API reference
& code documentation for AI coding assistants.**

What do We Want

We need, for all package functions, to **store**:

- Well-curated snippet (metadata, context for the agent);
- Accurate description of this snippet's functionality (vector);
- Programming language tag (metadata);
- Version tag (metadata);
- Package name tag (metadata).

We need, for every user request, to **find**:

- **Semantic match** by description of a code snippet,
filtered by fitting version, package name, and programming
language

What did We Get

qdrant-store:
sometimes stores
weird metadata

qdrant-find:
troubles with
consistent &
correctly-formed
filters

Point 420e1264-06c0-4b28-b41a-30b61a626668

Payload:

document

```
```python
api_key = os.getenv("QDRANT_API_KEY")
cloud_url = os.getenv("QDRANT_URL")
return QdrantClient(url=cloud_url, api_key=api_key)
```
Basic Qdrant client initialization using environment variables. Retrieves API key and cloud URL from environment variables and creates a QdrantClient instance for connecting to Qdrant Cloud.
```

metadata

```
{
  "code_type": "client_initialization",
  "authentication": "api_key",
  "environment_variables": [
    {
      "0": "QDRANT_API_KEY",
      "1": "QDRANT_URL"
    }
  ],
  "platform": "qdrant_cloud"
}
```

Vectors:

Vectors:

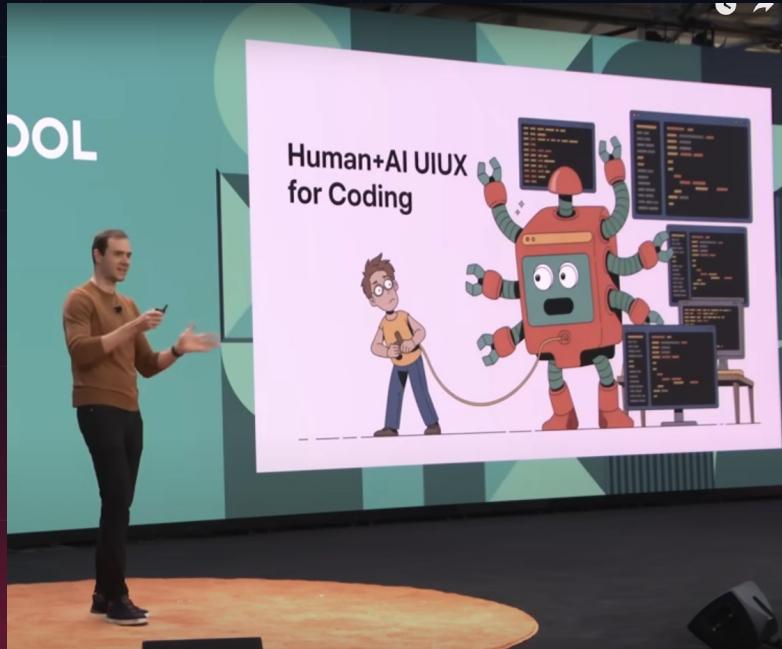
Name: fast-bge-base-en-v1.5 Length: 768

OPEN GRAPH FIND SIMILAR

???

The screenshot shows the Qdrant UI interface for a specific point. The 'document' field contains a Python code snippet for initializing a Qdrant client using environment variables. The 'metadata' field contains a JSON object with four items. One of these items, which includes environment variable keys 'QDRANT_API_KEY' and 'QDRANT_URL', is highlighted with a red border. A red question mark is placed to the right of the highlighted metadata section, indicating that this is unexpected or problematic metadata. The 'Vectors' section at the bottom shows the vector name 'fast-bge-base-en-v1.5' and length '768'.

Keep Agents on a Leash



We need to help our AI coding assistants by avoiding situations with **too many degrees of freedom**.

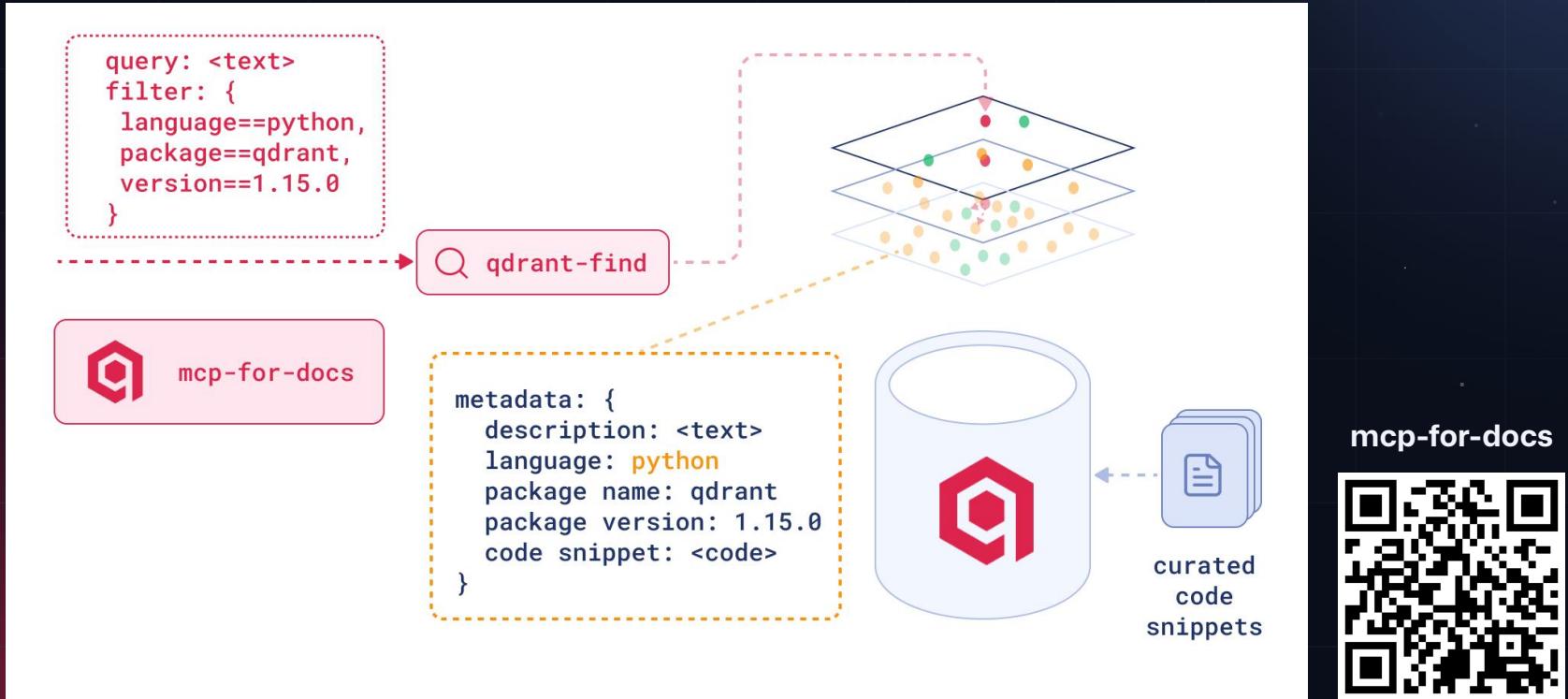
So, we updated our **mcp-server-qdrant** to use it as a **customizable base class**:

- **Customizable filters** restrictions & LLM-friendly format of metadata filtering
- Customizable switching `qdrant-store` tool on/off (**read_only mode**)

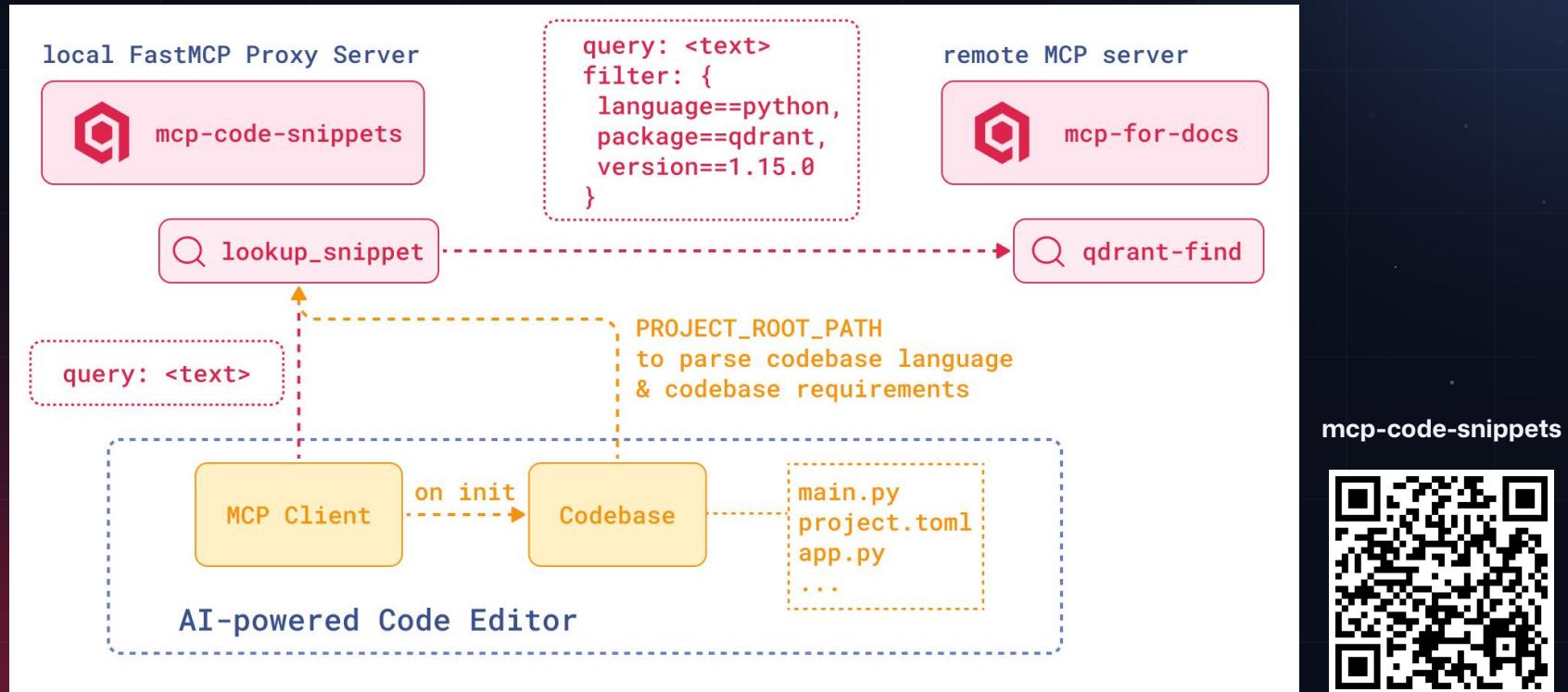
And built on top our **own custom MCP server, suitable solely as an API reference for AI coding assistants**.

Qdrant MCP-code-snippets

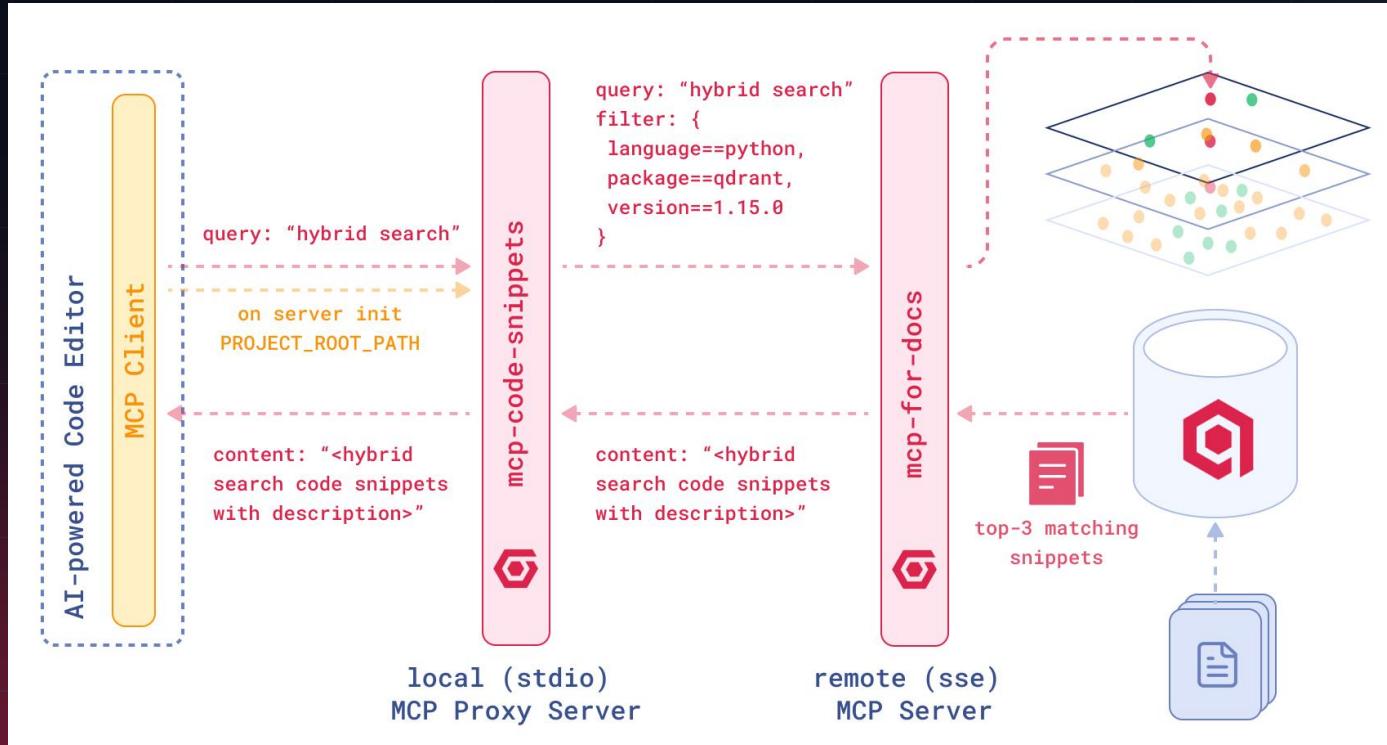
#1 Remote MCP server: mcp-for-docs



#2 Local MCP Proxy: mcp-code-snippets



How it was Supposed to Work



And it Did!

At the end of July, **mcp-code-snippets** could be installed in any popular IDE and would supply AI coding assistants with the latest Qdrant code snippets.

“Hybrid Search with Qdrant” ->

I'll help you create a simple example of hybrid search in Qdrant. Let me first look up code snippets for Qdrant hybrid search functionality.

> Ran `lookup-snippet` – mcpCodeSnippets
(MCP Server) ✓

Great! Now let me look up more specific information about setting up collections for hybrid search:

> Ran `Lookup-snippet` – mcpCodeSnippets
(MCP Server) ✓

Now let me look up information about adding points with both dense and sparse vectors:

> Ran `lookup-snippet` – mcpCodeSnippets
(MCP Server) ✓

So We Set a New Goal

Turn `mcp-code-snippets` into a **universal open-source API reference for AI coding assistants.**

Basically, extend the snippets dataset to cover every popular library out there.

Why?

- We believe in **open source** over gatekeeping.
- We know how to do search (if not us, then who?), so we have all the potential to build a **high-quality** tool for supplying AI coding assistants with context.
- It's a fun, simple project. How long could it take?



Well, How Hard Can it Be

Qdrant snippets are manually curated & on our Github. Let's just parse other GitHub repos with docs!

Problems:

- Some part is in docstrings, some in .md/.rst files, some buried in source code.
- Auto doc generation tools can't be reused, they're not universal.
- Some source files aren't accessible.

Solution:

Parse HTML directly and do it in a unified, scalable way → build an API.



What Can Even Go Wrong...

HTML parsing doesn't provide snippet languages in a universal way.

And we **need them** to filter.

Oh, but there are open-source language-detecting tools! Wait... but... the quality is bad?!

You're here: fine-tuning CodeBERT three times

- Generated a training dataset the same way as Guesslang (20k examples per language)
- Had to `teach codeberta-small-v1` C#

85% accuracy on Qdrant code snippets vs 65% for the base model



Our CodeBERT

Finally, doc2snippets*

The screenshot shows the Qdrant API documentation interface. At the top, it says "default". Below that is a list of endpoints:

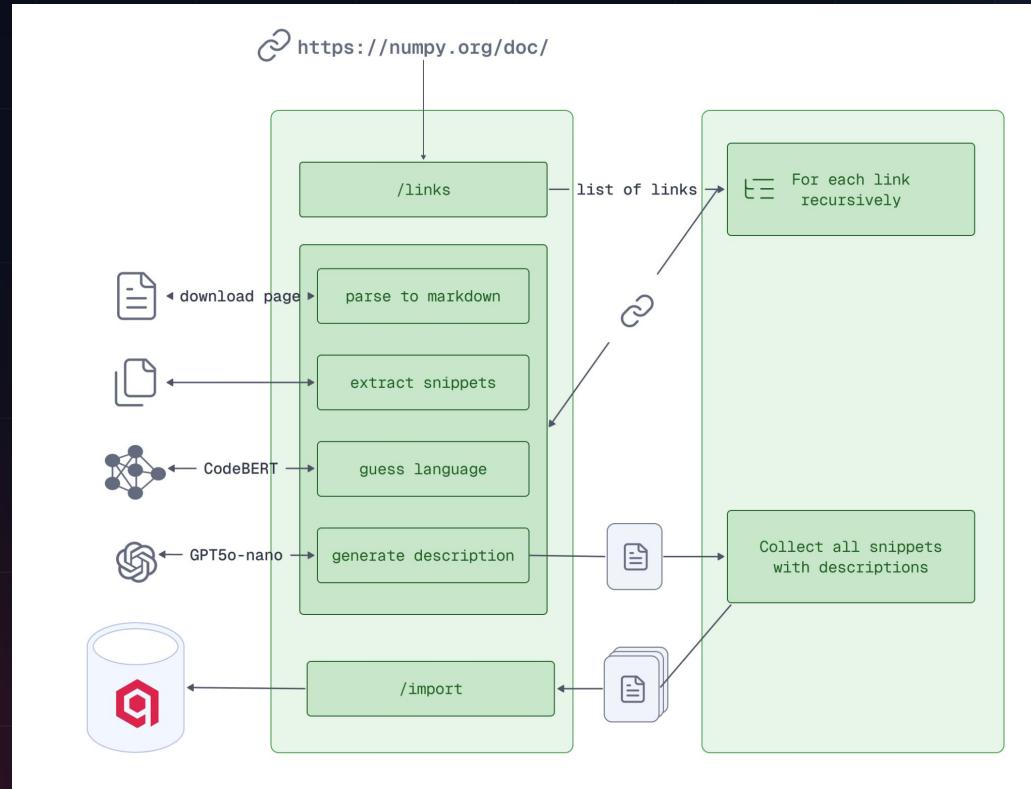
- GET /libraries List Libraries
- GET /library/{name} Get Library
- POST /web Convert Website
- POST /links Get All Links
- POST /import Import Snippets
- GET /available Available Libraries

Below the endpoints is a section titled "Schemas" which contains:

- HTTPValidationError > Expand all object
- Snippet > Expand all object
- ValidationError > Expand all object

*Will be open-sourced soon, monitor Qdrant.org on GitHub

Dissecting doc2snippets



Where We Are Now

Numbers:

- 40 libraries (Python, most popular), plus Qdrant in all 6 languages
- ~50k code snippets

And it works! You'll see in a minute :)

Plans:

- Open-source doc2snippets
- Search optimization (prompt engineering, code-to-text, hybrid search, etc.)
- Eval & benchmarks
- Much-much-much more libraries across all 6 languages
- Package versioning support

Goal stays the same, and we're almost there!

Demo (say hi to Till)

Thank You! Let's Keep the Tech Yapping Going:)

My Search Meetup, the next one is on the 26th of March, 2026

The screenshot shows a Meetup event page. At the top left is a magnifying glass icon with a blue lightning bolt inside. To its right is a large, stylized graphic of a hand holding a pen, set against a background of blue and white geometric shapes. In the bottom right corner of the graphic is a small 'Manage' button with a blue arrow. Below the graphic, the event title is displayed in bold black text: "Bavaria, Advancements in SEArch Development (BASED) Meetup". Underneath the title, the location is listed as "Munich — 11:41 CEST". A descriptive text follows: "Where enthusiasts discuss the latest trends, breakthroughs and challenges in modern search. No sales pitches, no gatekeeping — just an open space to share ideas:". At the very bottom left is a small globe icon.



Till Bungert



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