

# Welcome to Bavaria, Advancements in SEarch Development Meetup!

@Center for Software Engineering Excellence  
Thursday, October 9th, 2025



# Meet the Organizers



[LinkedIn](#)

**Evgeniya**  
Developer Advocate  
[@Qdrant](#)



[LinkedIn](#)

**Daniel**  
Search Consultant  
[@OpenSource Connections](#)



# Why BASED Meetups?

We want to create a community where **professionals & enthusiasts discuss the latest trends, breakthroughs and challenges in modern search.**

No sales pitches, no gatekeeping — just an open space to share ideas, learn from each other, and explore the technologies shaping the future of search.

Whether you're building production systems, researching search algorithms, or just curious about the field, **you're welcome here.**



# About Today

**18:15 - 18:30**, Opening Note from Organizers & Introduction by Sponsors (CSEE & Qdrant);

**18:30 - 19:00**, “*Old problems, new contexts: finding the right context by fast-forwarding 20 years of search*”

**19:00 - 19:10**, Break

**19:10 - 19:40**, “*Retrieval for every occasion: combining knowledge graphs and vector search*”

**19:40 - 20:10**, “*Search results diversification*”

**20:10 - 20:15**, Closing Note

**20:15 - 21:00**, Networking with 🍺 & 🍕



*“I would rather have questions that can't be answered than answers that can't be questioned”* (... but we will try to answer!)

Richard Feynman

<https://www.slido.com/>

Type your question

[Popular](#) [Recent](#)

1 question

Anonymous  
2 days ago

0

When will the next BASED meetup take place?

Joining as a participant? # Enter code here →

2623957





# Center for Software Engineering Excellence (CSEE)

Technical  
University  
of Munich



HARVARD  
UNIVERSITY



LUDWIG-  
MAXIMILIANS-  
UNIVERSITÄT  
MÜNCHEN



## What we offer

### Developers

Community and events for software engineers

### Students

BSc. and MSc. Practical Course at TUM  
“Software Engineering and Applied AI”

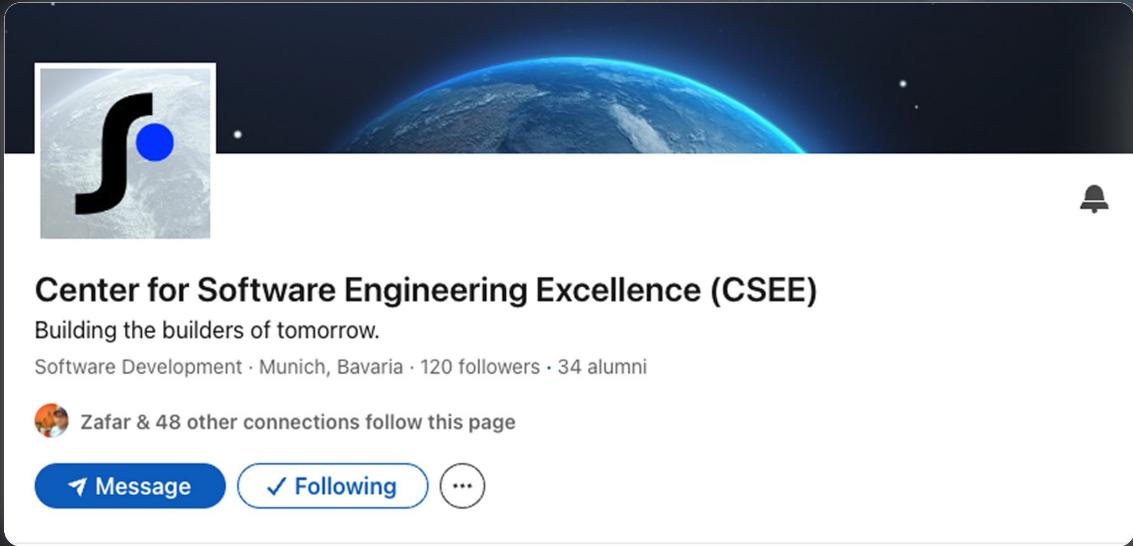
For all

**Referral Program**

# Selection of Partners



Follow us on **LinkedIn** 



The screenshot shows a LinkedIn company page. At the top left is a square profile picture containing a stylized 'S' logo. To the right of the logo is a large, semi-transparent image of Earth from space. In the top right corner of the page area, there is a small bell icon. Below the profile picture, the company name 'Center for Software Engineering Excellence (CSEE)' is displayed in bold black text. Underneath the name is the tagline 'Building the builders of tomorrow.' Further down, it says 'Software Development · Munich, Bavaria · 120 followers · 34 alumni'. A small circular profile picture of a person named 'Zafar' is shown next to the text 'Zafar & 48 other connections follow this page'. At the bottom of the page area are three buttons: a blue 'Message' button with a white arrow icon, a light blue 'Following' button with a checkmark icon, and a grey '...' button.

**Center for Software Engineering Excellence (CSEE)**

Building the builders of tomorrow.

Software Development · Munich, Bavaria · 120 followers · 34 alumni

Zafar & 48 other connections follow this page

 Message    Following   

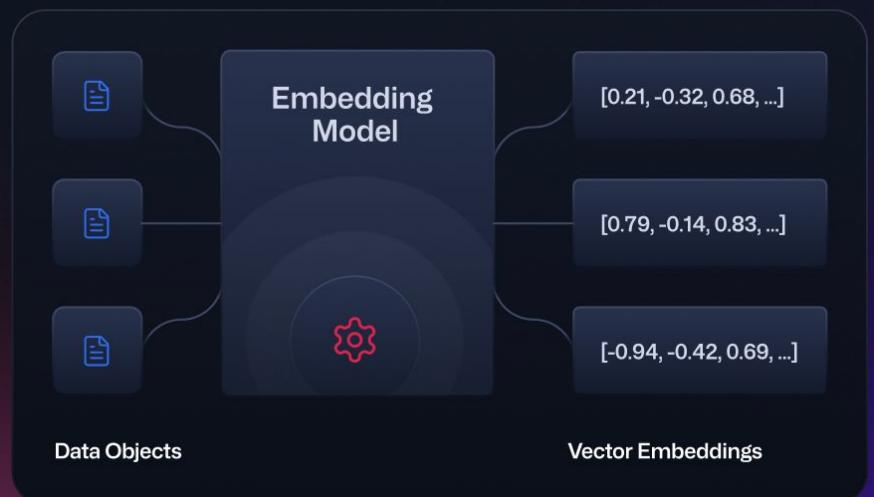
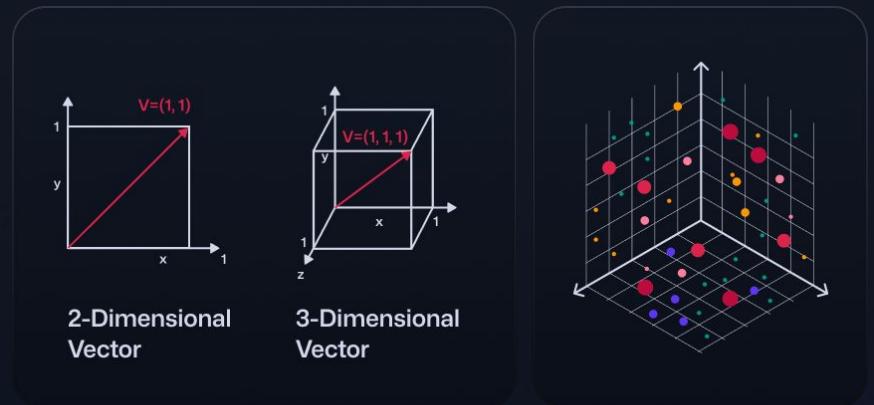


# Who is Qdrant ?

# Vector Search Basics

Two different vector embeddings should be close to each other if they represent a similar input object.

Embeddings are generated by neural networks and can contain thousands of dimensions.



# Vector Search in Production with Qdrant

- Written in **Rust** and offers **great performance**.
- Open sourced, makes vector search **affordable**.
- Allows to interact by **HTTP** or **gRPC** protocols.
- Runs both in **single and multiple node** setup.
- Incorporates **category**, **geo-coordinates** and **full-text filters**.
- Supports **hybrid**, **multimodal**, **multivector** and **multi-staged** search
- Official **Python**, **Javascript/TypeScript**, **Rust** and **Go** SDKs.

For Managed Cloud solutions, check out  
Cloud Embeddings Inference.



# Qdrant-at-a-Glance

Vector Search Engine. Not Database.

## Built-Out for Search-First Workflows

Qdrant is built from the ground up with **search as the core functionality**. Conventional databases focus on ACID transactions and strong consistency. In contrast, search engines are optimized for scalability, low-latency search, and high availability.

## Engineered for Vector Search at Scale

Qdrant is purposed to handle extremely high-dimensional embeddings. It's designed with a **vector index as a central component of the system**, allowing a custom, finely tuned approach to data and index management that secures high performance even as data grows and changes dynamically

## Specialized for Advanced Vector Operations

Qdrant is designed from the ground up to handle high-dimensional vector math and (dis-)similarity-based retrieval. This allows for leveraging the full potential of vector search **beyond simple similarity ranking** from multi-stage filtering to dynamic exploration of high-dimensional spaces.

### Quick and Easy to Start



### Performance Centric



### Fully Open Source Project



### All Embeddings Types Supported



### Scalability Oriented



### Resource Optimized



# How Qdrant Achieves Search

## Core Capabilities

### Vector Search

Scalable similarity and discovery search (billions of vectors)

### Hybrid Search

Combine dense + sparse embeddings, and metadata filters

### Filtering

Numeric, categorical, geo, temporal filters out-of-the-box

### Distributed & Resilient

Replication, sharding, multi-tenancy

### Re-ranking

Maximum Marginal Relevance (MMR), score boosting, multi-stage retrieval

### Quantization

Binary (1, 1.5 and 2-bit), scalar & product; lower cost without major recall loss

## Advanced Features

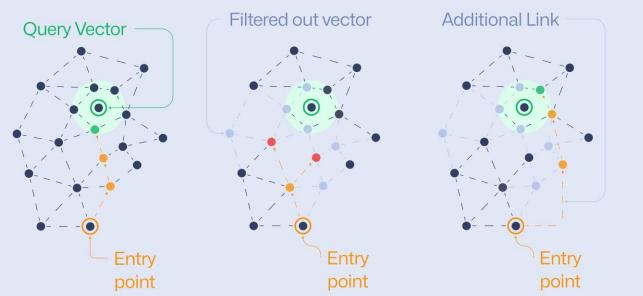
### Multi-vectors

Late interaction for retrieval models (e.g. ColBERT or ColPali)

### Performance Optimizations

HNSW healing, incremental indexing & tuning

#### Filterable HNSW



#### Similarity Search



#### Similarity Search with MMR



# Qdrant Innovations

## FastEmbed

Lightweight, fast Python library built for embedding generation **built in & integrated with Qdrant**.

- **Minimum dependencies:** doesn't require GPU and doesn't download GBs of PyTorch dependencies
- **Designed for Speed:** uses the ONNX Runtime & data parallelism
- **Cutting edge models support:**
  - Late interaction (ColPali, ColBERT)
  - Sparse Neural (SPLADE, BM42, miniCOIL)
  - MUVERA embeddings
- **Seamless integration with Qdrant**
  - Inference + upsert/search in one step
  - Access to embedding models developed at Qdrant (miniCOIL, BM42)

## MCP Servers

### mcp-server-qdrant

An official MCP server for storing and retrieving information with Qdrant.

Supports **stdio, sse & steamable-http** protocols.

Applicable for:

- inline retrieval augmented generation (RAG)
- automating codebase documentation
- personalizing coding assistants based on the project requirements/best practices

Built as a foundation for your customizations.

### mcp-for-docs

Universal open-source API reference for AI coding assistants based on semantic code retrieval.

Supports multiple programming languages and library versioning.

## Qdrant Edge

Beta

Qdrant Edge is a **lightweight, in-process vector search engine designed to run on edge devices**, from IoT sensors to mobile phones.

- Runs as a lightweight, in-process library.
- Memory usage with built-in compression options and offload data to disk
- Supports dense and multimodal vectors with structured filtering.
- Retrieval runs fully offline. Sync with Qdrant Cloud only when required
- Edge-Scale Multitenancy with Native SDKs

*Private beta available to selected teams building embedded or edge-native AI systems.*

# Getting Started with Qdrant

## Qdrant Open Source

Usually deployed with Docker containers. Lightweight, offers all the functionalities of Qdrant.

## Qdrant Managed Cloud

Run on one of the three major cloud providers: AWS, Azure, or GCP. Provides a management UI and API. For US regions, we offer **Cloud Embedding Inference** that processes raw data into vectors.

## Qdrant Hybrid Cloud

All the benefits of cloud deployment, but keeping the data on your premises. Requires a Kubernetes cluster and might be managed from Qdrant Cloud UI, but no data leaves your environment.

## Qdrant Private Cloud

A dedicated, on-premise solution that guarantees supreme data privacy and sovereignty.

## Python SDK Local Mode

Suitable mostly for quick experiments, but not intended to be running in production.

# Ecosystem

Gemini

n8n

MISTRAL AI\_

aws

UNSTRUCTURED

A



Google Cloud Platform

OpenAI

.jina

Haystack  
by deepset

crewai

LlamaIndex

LangChain

cohere

and more...

# Our Channel (Telegram)

-  BASED meetup discussion  
You  
<https://luma.com/cno8y0pv>
-  For everything else  
You  
 Btw Qdrant will do big one day event around vector search i
-  Content about Search Tech (blogs/papers/videos/etc)  
You  
Published together with Cle a blog based on her talk on the las
-  Search Q&A (share your pain)  
 "Search Q&A (share your pain)" was created



# We're about to launch a website with a blog

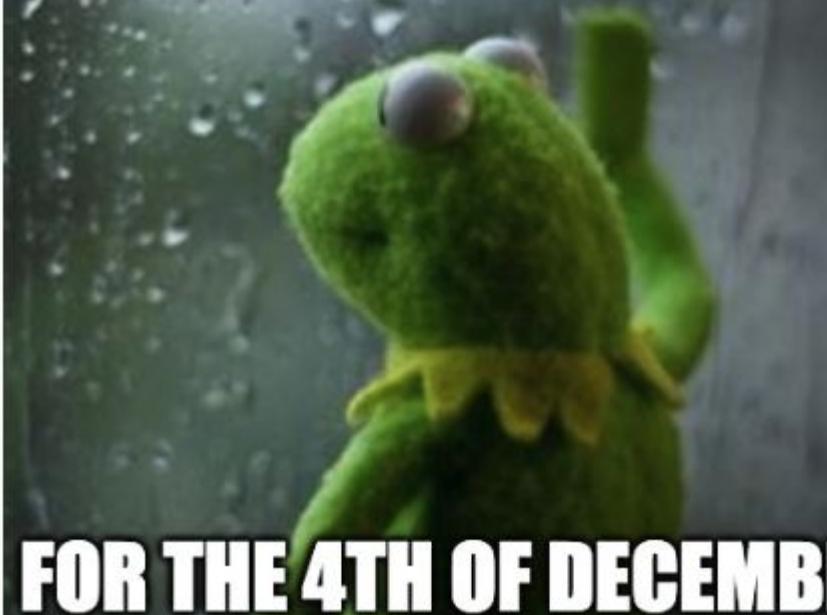
The screenshot shows a web browser window with the URL 'based-meetup.de/' in the address bar. The page content is as follows:

- Header:** BASED Meetup
- Navigation:** Home (underlined), About BASED Meetup, Blog, Events
- Placeholder Image:** A large, dark gray rectangular area containing a magnifying glass icon.
- Text:** Bavaria, Advancements in SEArch Development (BASED) Meetup
- Text:** BASED Meetup is where professionals & enthusiasts

Stay tuned!



**SEARCHING FOR A VENUE**



**FOR THE 4TH OF DECEMBER**



# Why BASED Meetups?

[5/5] Let us know what you liked, disliked or want to see in the future.

We're open to any suggestions, compliments & critique and want to learn! :)

Talks were really good. Would love to see more complex talks and demos as well!

6/6. Let us know what you liked, disliked or want to see in the future.

We're open to any suggestions, compliments & critique!:)

Loved it, always cool to chat about search :)

[5/5] Let us know what you liked, disliked or want to see in the future.

We're open to any suggestions, compliments & critique and want to learn! :)

I think nicely organized.

No Dislikes - to be honest

It's was overall a very good experience.

I really appreciate your effort you have put on - I like the way she explained everything so nicely. Next time I will come with questions.



# About the Future

We want to make this meetup recurring, and our **worst nightmare** is that it ends up being useless or boring.

So **please fill out the form** -> -> ->  
to help us shape the BASED future together!



Evgeniya,  
LinkedIn



Daniel,  
LinkedIn



P.S. Huge thanks to our hosts, CSEE ❤️

