

NoSQL

Epita - Fall 2025

Discord



Join **#epita-sp25-nosql**

<https://discord.gg/4rcjT5TUGx>



Presentation

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Started working with mysql in 2000

Teaching: SciencePo, IPSA, Eifrei, Epita, Gustave Eiffel, Openclassrooms, etc.

Syllabus

Details - [Syllabus](#)

NoSQL

MongoDB

Vector stores

Neo4j

- What for ?
- Use cases
- Ecosystem
- SQL Comparison
- (DNL) queries
- Performances
- LLMs with vector stores
- Schema in MongoDB
- Data science in Neo4j

Course Evaluation

- 1 MongoDB workshop (50%)
- 1 Neo4j workshop (50%)

Work on a dataset of your choosing

Scope

This is a course on MongoDB, Vector store and Neo4j.

- MongoDB: **Document database**. **large volume of data** that has **flexible schema**
- **Vector** databases! Vector search is the building block of **LLMs**.
 - Major players now offer vector search, including PostgreSQL, MongoDB, and Neo4J.
 - There are also dedicated vector databases such as **Weaviate**, Pinecone, chromadb, we are talking about **vector stores** .
- Neo4J: **graph database**. particularly effective for certain types of use cases and questions. we'll also look at alternatives.

Prerequisite

- Know your computer (Path, install, etc.)
- Terminal and Command Line
 - mongosh
 - cypher shell
- Mac: iTerm
- Windows:
 - git console
 - Powershell Admin

Tools

- [Google Drive](#): Slides and PDFs
- Github: scripts and pdf https://github.com/SkatAI/Epita_SP25_NoSQL
- Discord: your questions <https://discord.gg/4rcjT5TUGx>
- LLMs: some Answers

Languages

- javascript for MongoDB
- cypher for Neo4j
- python, javascript or your favorite language

AI policy

It would be absurd not to use LLMs

- Learn to work with LLMs
- How to avoid
 - cognitive offloading
 - the rabbit hole
 - hallucinations

- LLMs

- [DeepSeek](#), [Qwen.ai](#)
- Gemini on [aistudio.google.com](#) and in [Colab](#)
- [Claude.ai](#)
- [ChatGPT.com](#)
- [Mistral](#)
- [Grok](#) on X

- Platforms

- windsurf
- cursor
- claude code
- openAI codex
- Magnus.im

**NO PAIN
NO GAIN**

You don't get fit by watching workouts on Instagram.

Likewise, you don't learn by letting the LLM do the work.

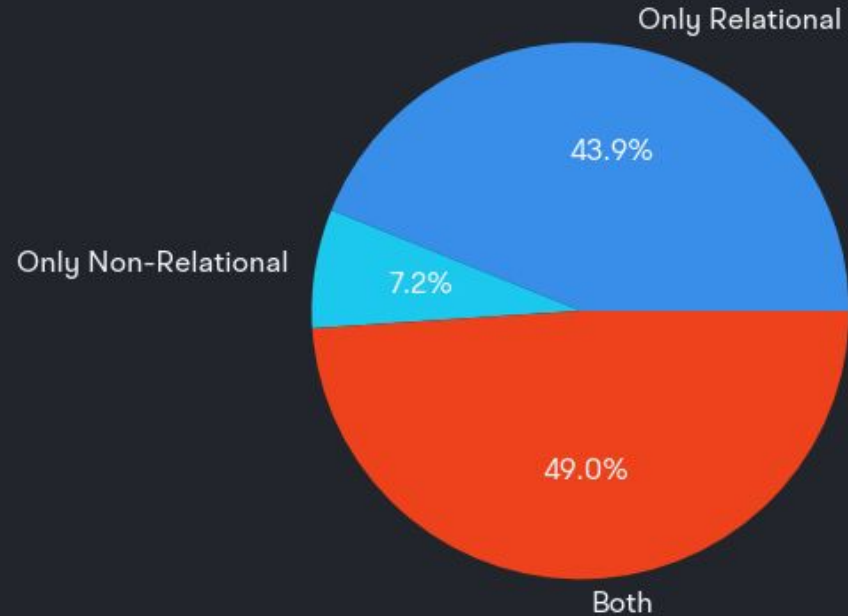
Why this course?

- the global NoSQL market projected to soar from \$7.3 billion in 2022 to \$86.3 billion by 2032, driven by a 28% annual growth rate
- NoSQL is for applications with unpredictable workloads, such as social media platforms, e-commerce sites, and IoT systems
- future-proofing your career and standing out in a competitive job market.
- Students who learn NoSQL are better prepared to work on cutting-edge technologies like real-time analytics, machine learning, and distributed systems.

SQL vs NoSQL usage stackoverflow 2023

NoSQL
in parallel
SQL

Relational vs. Non-Relational Database Usage



Questionnaire to find out your expectations

Complete the following questionnaire

<https://forms.gle/L87wNPPaH85JT72YA>

Then

- Join the Discord: <https://discord.gg/4rcjT5TUGx>
- clone the github repo: https://github.com/SkatAI/Epita_SP25_NoSQL
- access the slides in [Google Drive](#)