MongoDB Day

MongoDB Day Frankfurt

Best Practices for Building AI-Driven Applications with MongoDB Professional Services

Agenda

Why AI needs the right foundations

Challenges

Best practices for success

A real example of delivery

Takeaways

Why AI needs the right foundation

Artificial intelligence is transforming **how we solve problems** — in every industry, from healthcare to manufacturing.

But AI is **only as good as the data** it learns from, and real-world data is often messy: different formats, varying quality, and massive scale.

To build AI solutions that last, teams need **strong, flexible foundations** for managing and working with their data.

CHALLENGES

How do we approach the challenges?

Aligning, Planning & Discovery

Goal-setting workshops and deep-dive discovery sessions to define success criteria, clarify solution vision, assess current capabilities, and uncover skill gaps. This sets a clear roadmap for delivery.

Data Assessment & Readiness

Comprehensive review of data sources, formats, ingestion processes, and quality. Identify gaps and technical constraints, ensuring readiness for AI workloads and MongoDB architecture.

Architecture Design & Foundations

Design a scalable, flexible data architecture in MongoDB Atlas to support multi-modal, high-volume data and evolving application requirements. Apply best practices to avoid future design issues.

Solution Build & Integration

Implement ingestion pipelines, preprocessing workflows, and model integration points. Co-deliver with internal teams to accelerate development while transferring knowledge.

Testing, Optimisation & Enablement

Conduct production-readiness tests, tune performance and indexing strategies, and provide enablement through documentation, training, and skills transfer.

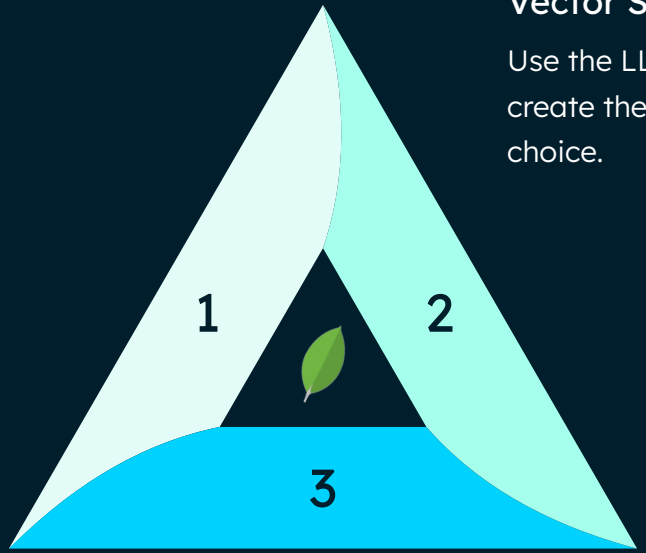
> MongoDB Professional Services empower your teams to build with confidence, unlocking the full potential of your data and turning bold ideas into reality — together.

A real example of delivery

Let MongoDB power your AI transformation

MongoDB

The NoSQL base of your AI project.



Vector Search

Use the LLM of your choice to create the product of your choice.

Atlas Search

The search that lives where your data lives.

The challenges

Subtle faults often produce **sound** signatures before visible symptoms.

Detecting these at scale requires **real-time audio analysis**.

Audio data is **high-volume, high-frequency**, and varied (plus metadata).

Professional Services designed flexible schemas and pipelines for ingesting and processing this data.

SOLUTION

From Data to Diagnosis

Original sound files normalized and sent to the **embedding model**.

Sound files embedded with **3840 dimensions**.

More than 20.000 files hosted on a M20 - M30 cluster and S40 search node for a small scale rollout.

Sub 1 second search time with hybrid search.

Currently rolled out to designated users, **large scale rollout** planned in the near future.

We are not alone, MongoDB has many different partners to enable the journey.

THE RESULT

AI for aftersales - noise diagnostic

- Business need : Identify similar incidents that already have a solution
- Use case : Enable comparison between incidents and trace similar incidents that already have a solution

Current state	Customer complains	Cotech selects a symptom	Cotech identifies a solution among the possibilites	Cotech visualizes the solution technical bulletin (TB)

Future state	Customer complains Diagnostic comments	Search similar customer complaints or diagnostic comment symptom and directly push a solution	Cotech visualizes the solution technical bulletin (TB)

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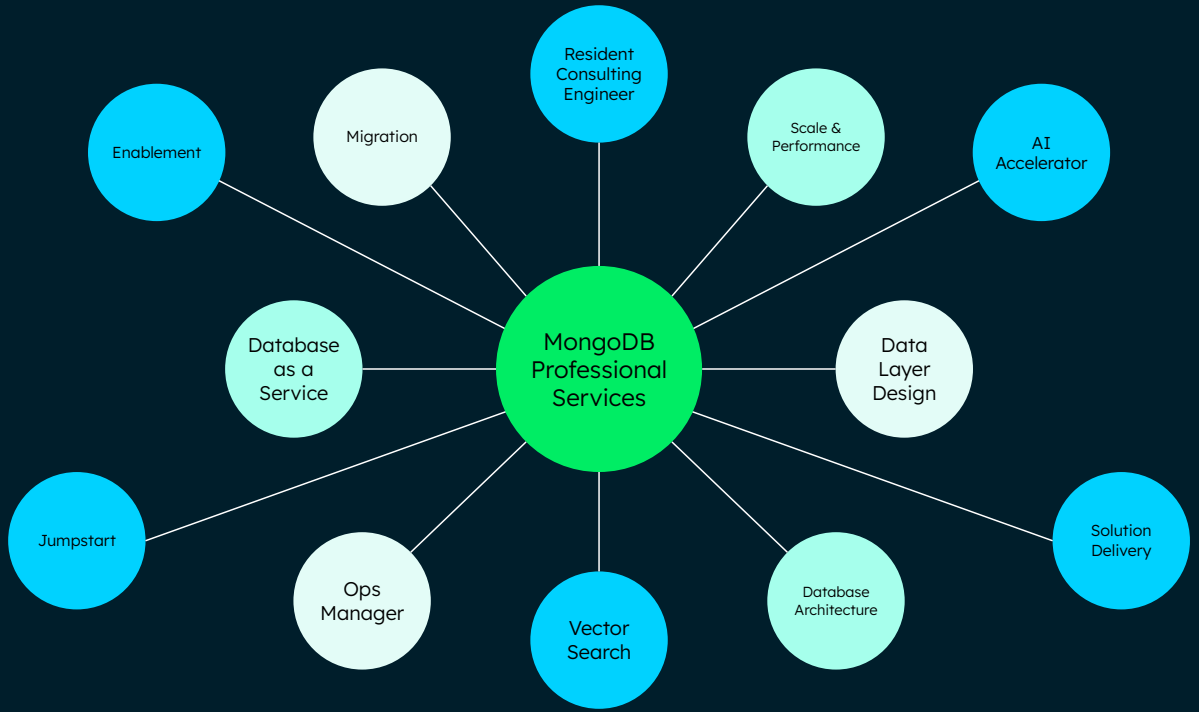
Questions?

FIND US AT THE PROFESSIONAL SERVICES BOOTH OR ONLINE!

PROFESSIONAL SERVICE

What do we do?



Thank you for your time.