Azure Developer Community

Tamil Nadu

What we do?

Meetups

Network of Beginners, Professionals & Experts

Azure Cert Study Jam

Tech-talks / workshops
In Colleges

#Azure Developer Community

RAG Is Not About Vector Databases - It's About Retrieval Thinking

Why Most GenAI Proof-of-Concepts Fail in Production

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LEARN WITH SARVESH

COURSES. CLARITY. CONFIDENCE.

Self intro

If vector databases solved RAG... why do most RAG apps still fail in production?

Why LLMs Alone Are Not Enough

- Trained on general internet data
- No access to your private documents
- Hallucinates when uncertain

What is RAG?

RAG = Retrieval + Generation

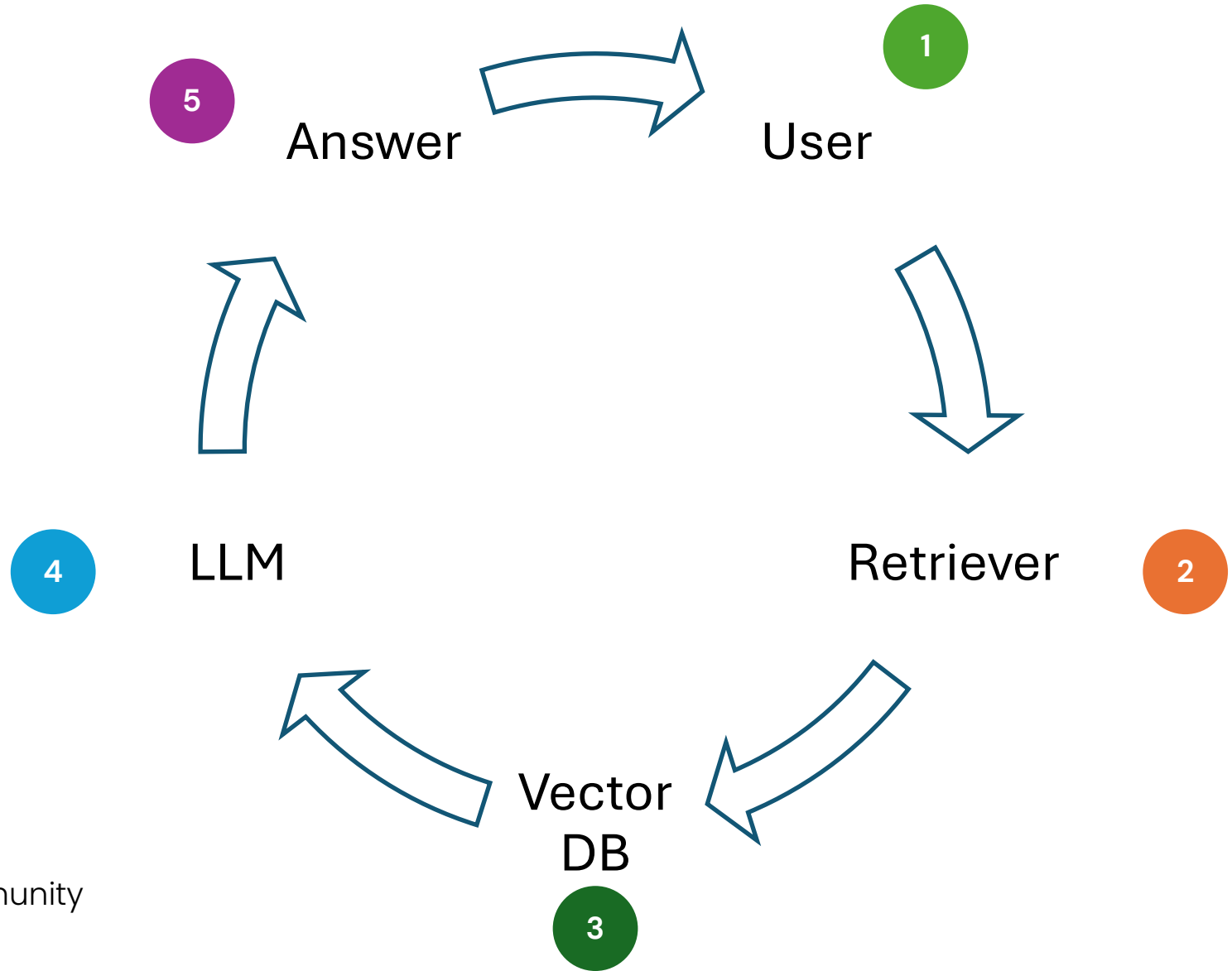
Retrieve relevant information

Generate answer using that information

Analogy:

Open-book exam for the model

Typical RAG Architecture



The Problem

The Myth

“Just add a vector database”

“Better embeddings = better answers”

“More documents = better results”

Why PoCs Look Impressive

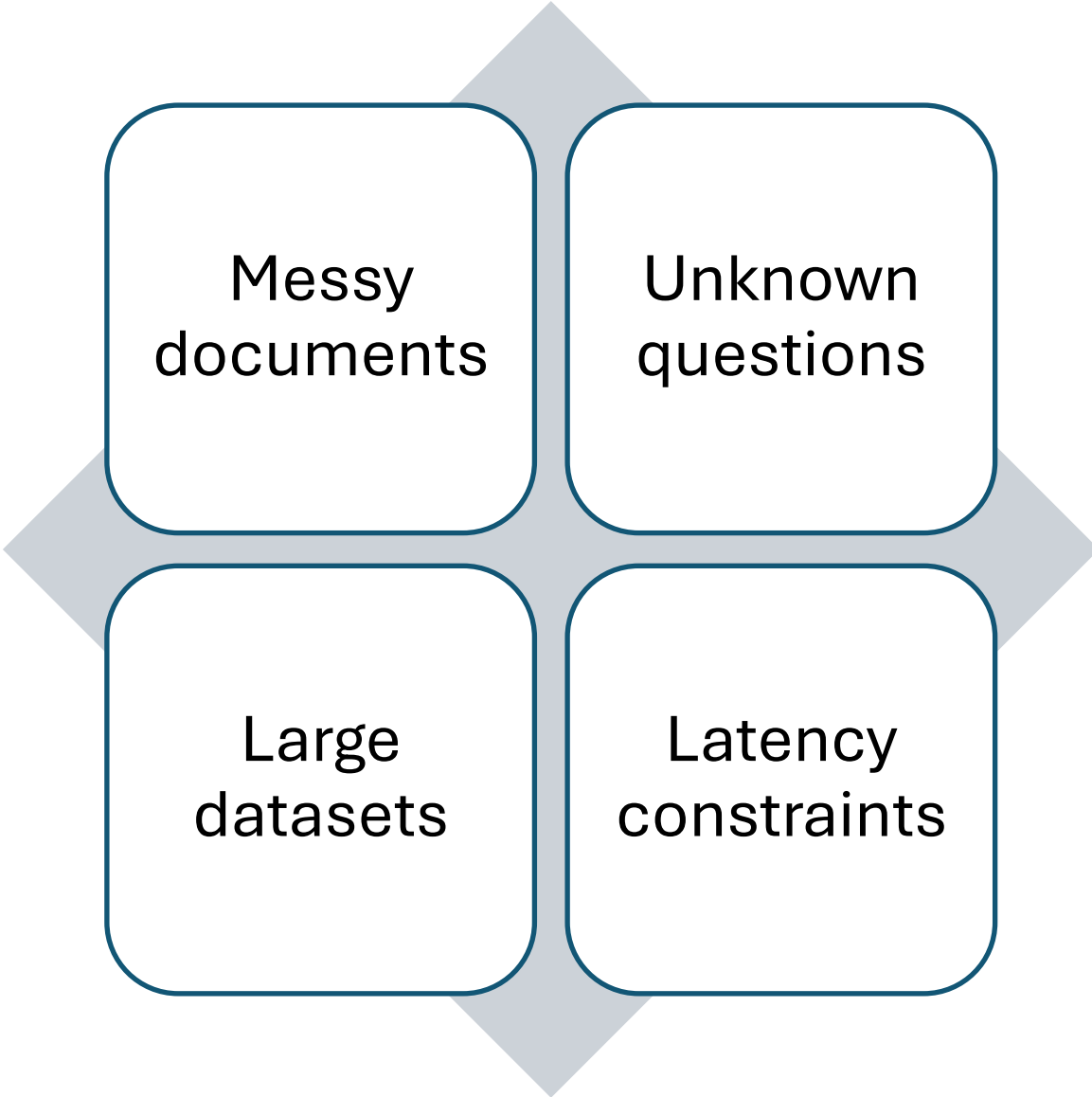
Small dataset

Known questions

Clean documents

Manual testing

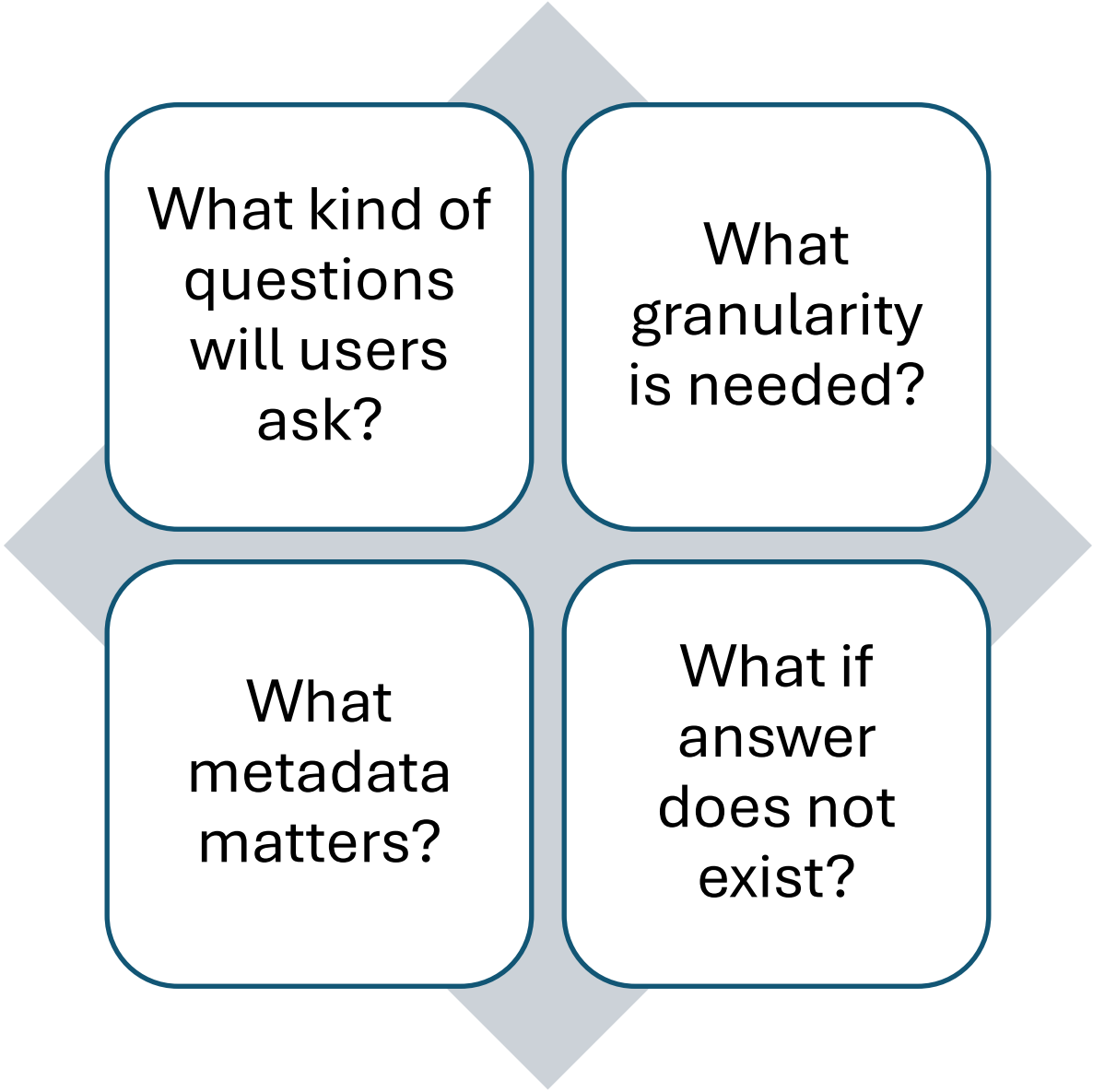
Reality in Production



Retrieval Thinking

Retrieval Thinking

Before storing documents, ask:



Chunking Is a Design Decision

Bad:

- Large 2000-token chunks

Better:

- Logical sections
- Policy-based segmentation
- FAQ-style chunks

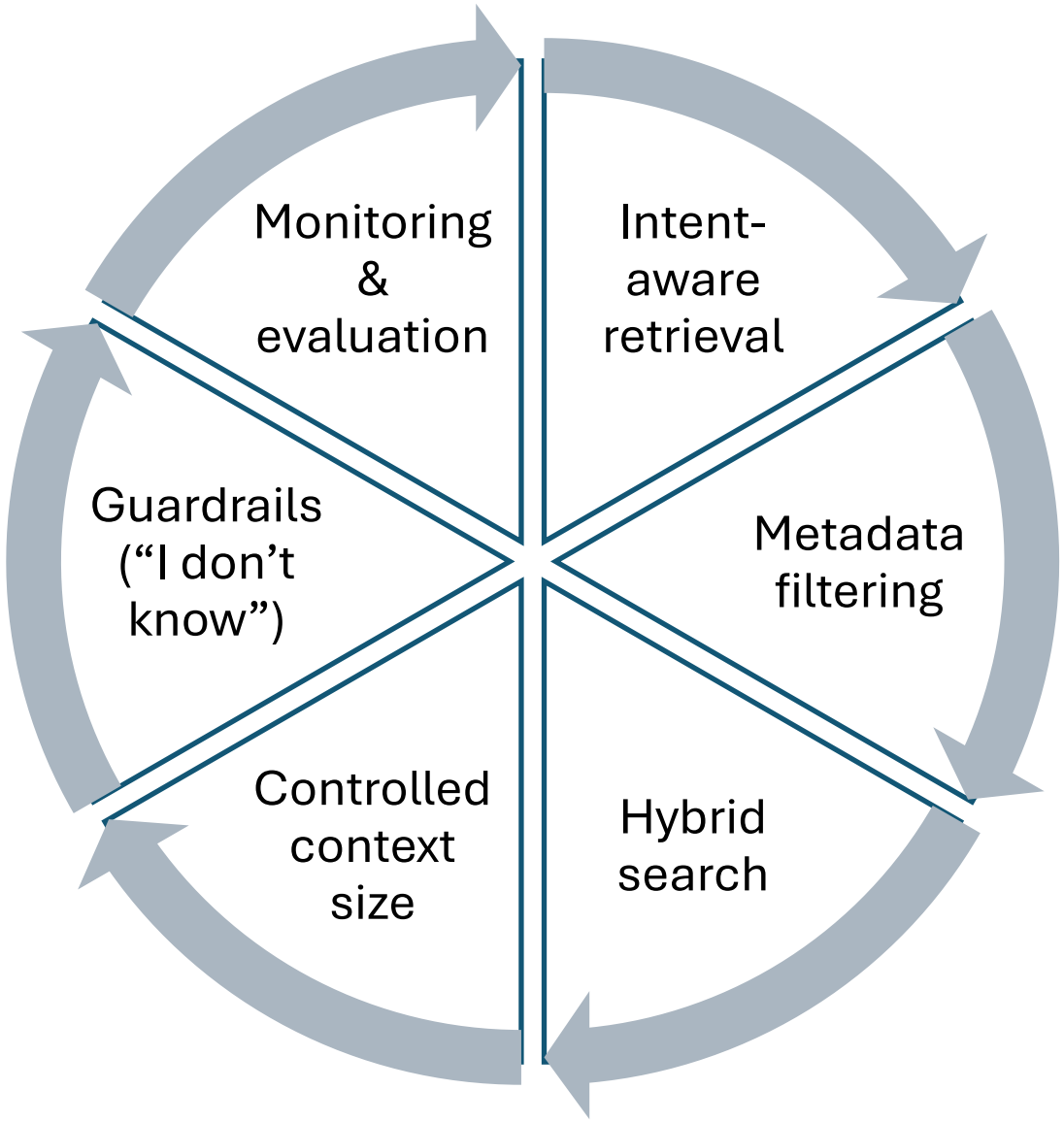
The Demo

After Basic RAG Failure

After Improved Retrieval

Production-Ready RAG

Production-Ready RAG Needs



RAG Patterns in Production

Hybrid RAG

Vector search + Keyword search
Better precision

Multi-Stage Retrieval

Retrieve broadly
Re-rank
Then generate

Agentic RAG

Planner decides which retriever to use
Tool-based retrieval

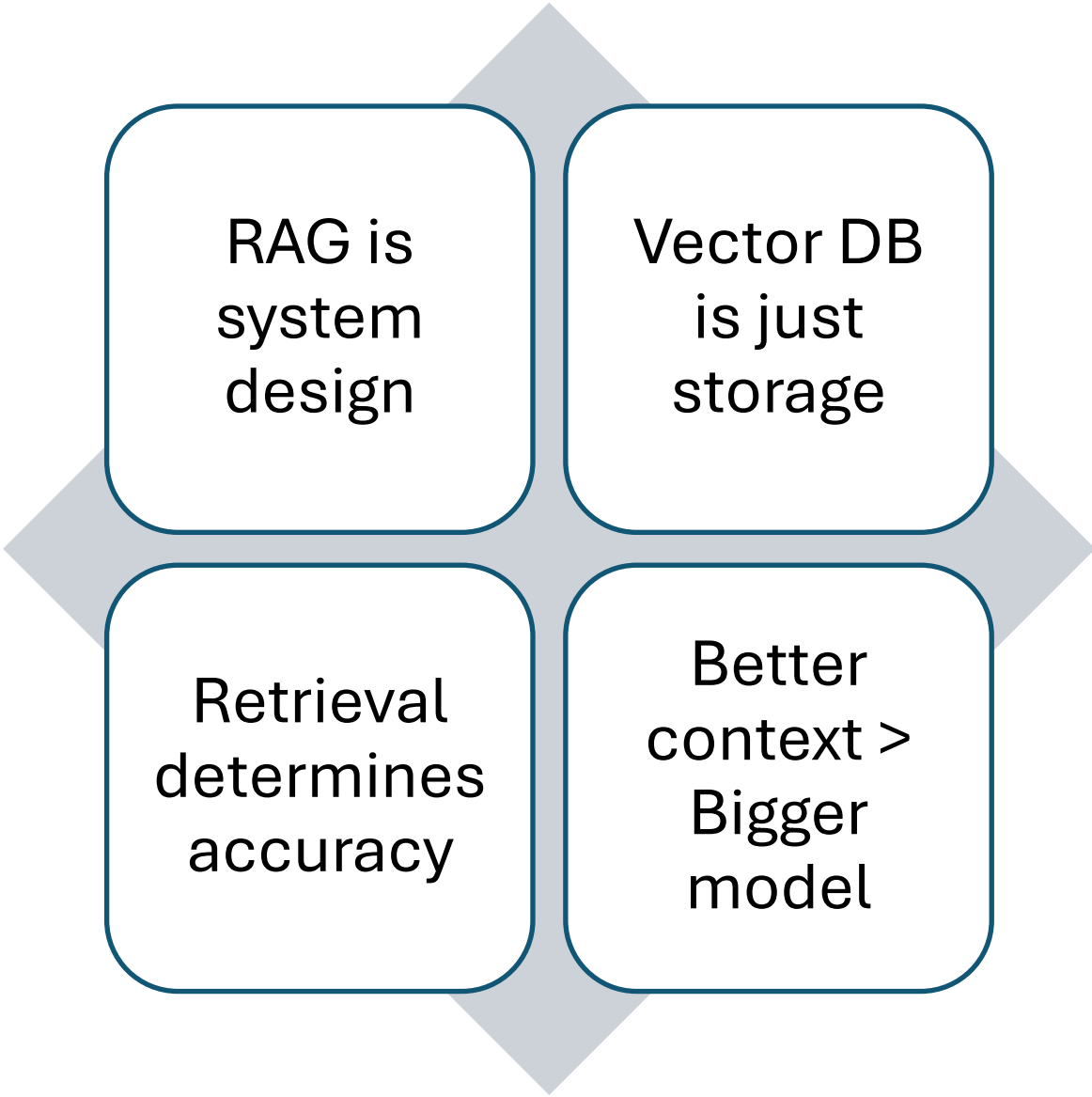
RAG + Evaluation

Automatic answer scoring
Feedback loops
Monitoring hallucinationas

Taking RAG to Production

- Latency constraints
- Cost control (token usage)
- Caching strategies
- Embedding refresh pipelines
- Document update handling
- Access control (who can see what)

Final Takeaways



Cohort

https://www.learnwithsarvesh.com/

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Open for Q&A

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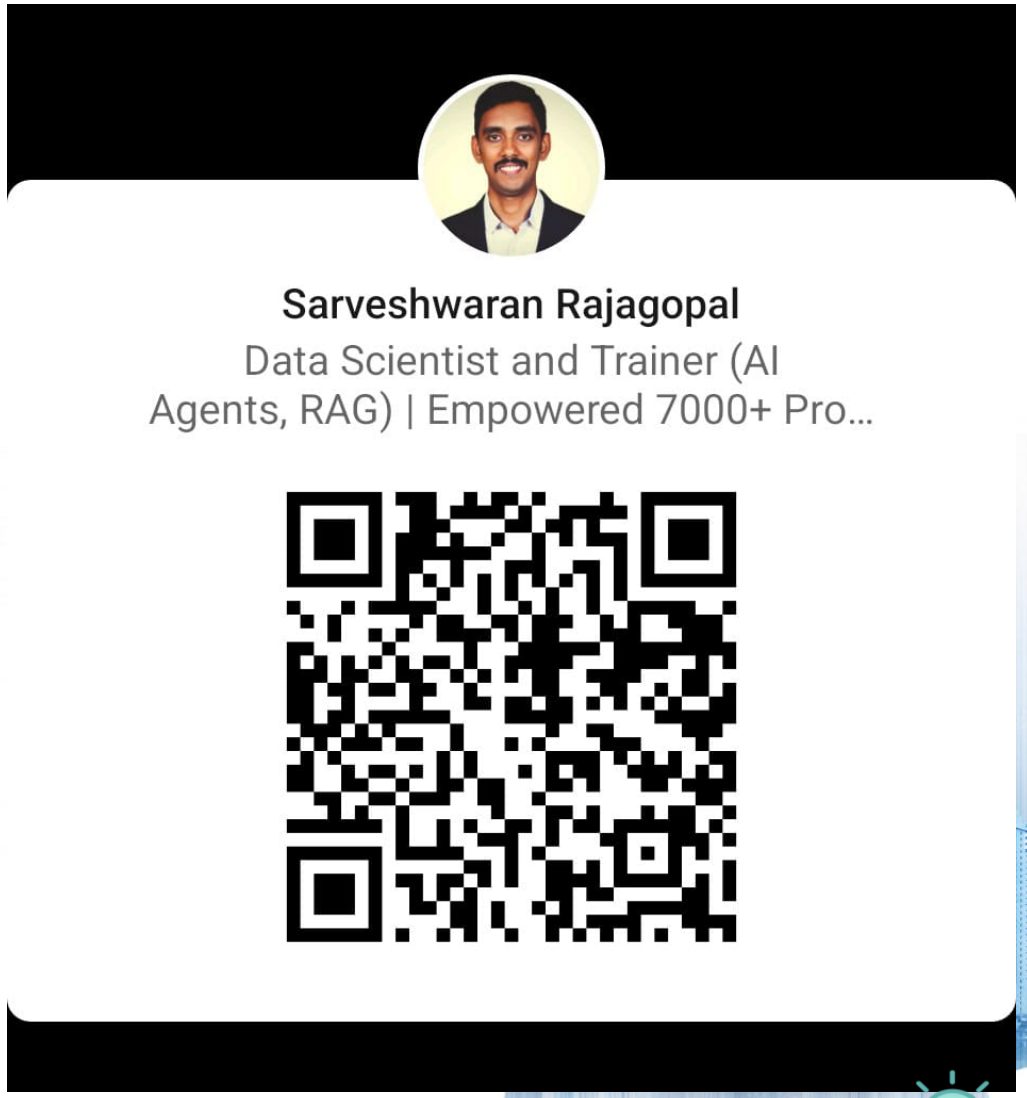

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Thank you!!

Thank You!