

# 12-Week AI System Design Curriculum – Curated Links

## Week 1–2: Embeddings & Semantic Search

- [Improve GenAI Search with Vertex AI Embeddings](#)
- [Vertex Text Embeddings – Docs](#)
- [Embedding Task Types](#)
- [Gemini Embeddings API](#)
- [Pinecone – Vector Embeddings Explained](#)

## Week 3–4: Vector Search & RAG Foundations

- [Vertex Vector Search Overview](#)
- [Matching Engine Overview](#)
- [Introducing Vertex RAG Engine](#)
- [RAG Engine Resource Hub](#)
- [Build RAG with Gemini 2 Flash](#)

## Week 5–6: Hybrid Search & Chunking

- [Pinecone – Hybrid Search Guide](#)
- [Hybrid Search Intro](#)
- [Qdrant – What is a Vector DB?](#)
- [Cohere – Chunking for RAG](#)

## Week 7–8: Advanced Retrieval & Agentic RAG

- [Agentic RAG – Cohere](#)
- [RAG Best Practices](#)
- [Multi-System Agents – Vertex](#)
- [Vertex Agent Engine Overview](#)

## **Week 9–10: Safety, Guardrails, Evaluation**

- Guardrails for GenAI
- Secure GenAI Systems – Google Cloud
- Evaluating GenAI Systems

## **Week 11–12: AI for Financial Services & Leadership**

- Financial Services AI Solutions – Google Cloud
- AI Strategy & Transformation