

AI/Data Engineering Interview Study Guide (10+ Years Experience)

Weekly Plan Overview

Week 1: Advanced Python & Design Patterns

Week 2: PySpark Optimization & Spark Performance

Week 3: Azure Data Engineering (ADF, Synapse, ADLS, Functions)

Week 4: GenAI, RAG, Azure AI Search, LLMOps

Week 5: DevOps, Monitoring, CI/CD

Week 6: System Design, Architecture, Leadership Rounds

Week 1: Advanced Python & Design Patterns

- Effective Python Tips - RealPython: <https://www.youtube.com/watch?v=OSFrDwwSuSo>
- Design Patterns in Python (All 23 Patterns): <https://www.youtube.com/watch?v=mWaZD8uztT8>
- SOLID Principles in Python: https://www.youtube.com/watch?v=6i1smp_1Bxs
- Python Memory Management & Profiling: <https://www.youtube.com/watch?v=0pP4EwWJglU>

Week 2: PySpark & Spark Performance Tuning

- PySpark Full Course - freeCodeCamp: https://www.youtube.com/watch?v=_C8kWso4ne4
- Understanding Databricks & Apache Spark Optimization:
<https://www.youtube.com/watch?v=hLOpfxpgc70>
- PySpark Optimization Tips (2024): https://www.youtube.com/watch?v=CY_WaxCxJco
- How to Optimize Databricks Clusters & Save \$\$\$:
<https://www.youtube.com/watch?v=KecDecRvWec>

Week 3: Azure Data Engineering

- ADF Advanced Data Flows - BI Consulting Pro: <https://www.youtube.com/watch?v=x7eTUJNEEYY>
- Azure Data Engineering Projects - CloudWithRanjit: <https://www.youtube.com/playlist?list=PLGjZwEtPN7j-Q59JYso3L4Z3u0b6ozxZL>
- Azure Functions Deep Dive - Azure Friday: https://www.youtube.com/playlist?list=PLLasX02E8BPBtz1TLaXKnvdfu8YIW8eD_
- ADF Pipeline Monitoring, Debugging & CI/CD: <https://www.youtube.com/watch?v=2KP3kmH2u6Y>

Week 4: GenAI, RAG, Azure AI

- RAG from Scratch - freeCodeCamp: <https://www.youtube.com/watch?v=-xl3uA4IGt4>
- Implement RAG with Azure AI Search: <https://www.youtube.com/watch?v=cHgZU5dqjyc>
- Production-Ready GenAI Apps: https://www.youtube.com/watch?v=_2tZaDs-w5s
- Prompt Flow & Azure AI Studio: https://www.youtube.com/watch?v=hSF_E_FxGvc
- LLMOps End-to-End - DeepLearning.AI: <https://www.youtube.com/watch?v=0Jx44piD-7k>

Week 5: DevOps, Monitoring, CI/CD

- Azure DevOps Beginner to Advanced - TechScalable: <https://www.youtube.com/playlist?list=PLsjUcU8CQXGn5fdd8QO5OkFfEo1u6zZYi>
- CI/CD in Azure Pipelines - Microsoft: <https://www.youtube.com/watch?v=2KP3kmH2u6Y>
- Monitoring in Azure - Azure Monitor Deep Dive: <https://www.youtube.com/watch?v=KAPJpTzDEtk>

Week 6: System Design & Architecture

- System Design Primer - Gaurav Sen: <https://www.youtube.com/watch?v=SqcXvc3ZmRU>
- System Design Mock Interview - Gaurav Sen: <https://www.youtube.com/watch?v=0EgpeYb3VnI>
- Tech Dummies - Real System Design Projects: <https://www.youtube.com/c/TechDummiesNarendraL/playlists>
- ByteByteGo - Scalable System Architecture: <https://www.youtube.com/c/ByteByteGo>