

Retrieval-Augmented Generation (RAG)

100% COMPLETE

RAG basics



Practice 1: Foundational Text-Based RAG System



RAG evaluation



Practice 2: RAG Pipeline Evaluation



RAG Advanced approaches



Practice 3: Practice: Hybrid Search + Reranking



Practice 4: Advanced RAG approaches



Multimodal RAG



Practice 5: Multimodal RAG (Phase 5.1 and 5.2)



Practice 6: Multimodal RAG with ColPali-like approach

**Practice 5: Multimodal RAG (Phase 5.1 and 5.2)**

Grid University

Phase 5.1: Multimodal RAG – Incorporating Tables

Objective: Extend the RAG system to understand and query data contained within the tables of the PDF.

Tasks:**1 Table Indexing & Retrieval:**

- Develop strategies for making tables "retrievable." This should involve all processes from Data Parsing Requirements section.

2 Querying Tabular Data:

- Develop prompts for the LLM to interpret queries related to tables and synthesise answers from the retrieved table data (potentially including simple calculations or direct data extraction).

3 Integrated Retrieval: Modify the retrieval pipeline to search across both text chunks and table representations.

- (Optional) Add Plotting functionality, similar to what you did in Capstone 1.

Phase 5.2: Multimodal RAG – Incorporating Images (Charts & Graphs)

Objective: Enable the RAG system to interpret and answer questions based on the visual data (charts, graphs) in the PDF.

1 Image Extraction & Understanding:

- Extract images (charts, graphs) from the PDF and process them based on Data Parsing requirements for images.

2 Querying Visual Data:

- Adapt the retrieval system to include these image descriptions in the search space.
- Develop prompts that allow the LLM to use the image-derived textual information to answer user queries.

Next: Final Assessment

In Progress

50%

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Final Assessment

Course Tasks

Course Evaluation