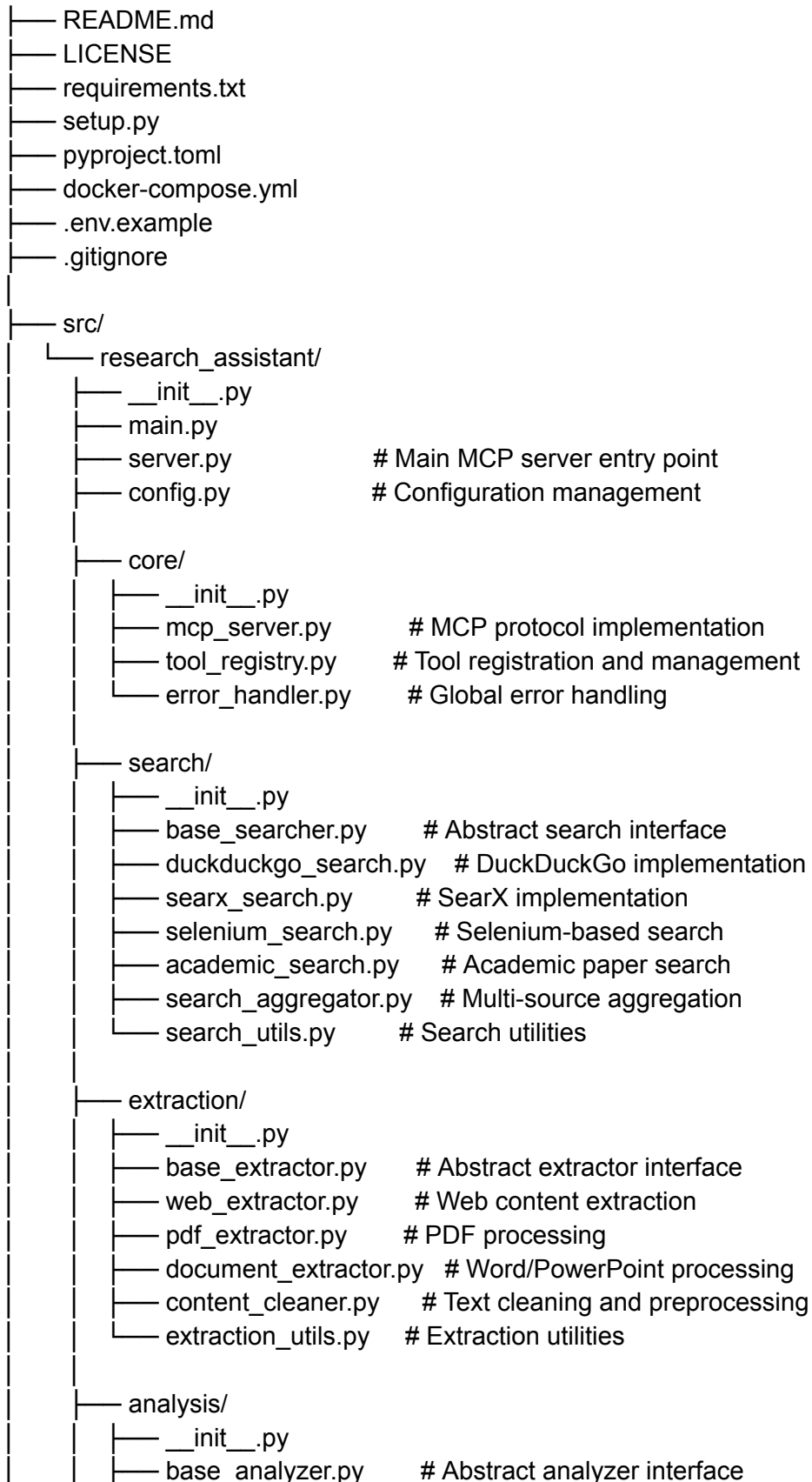
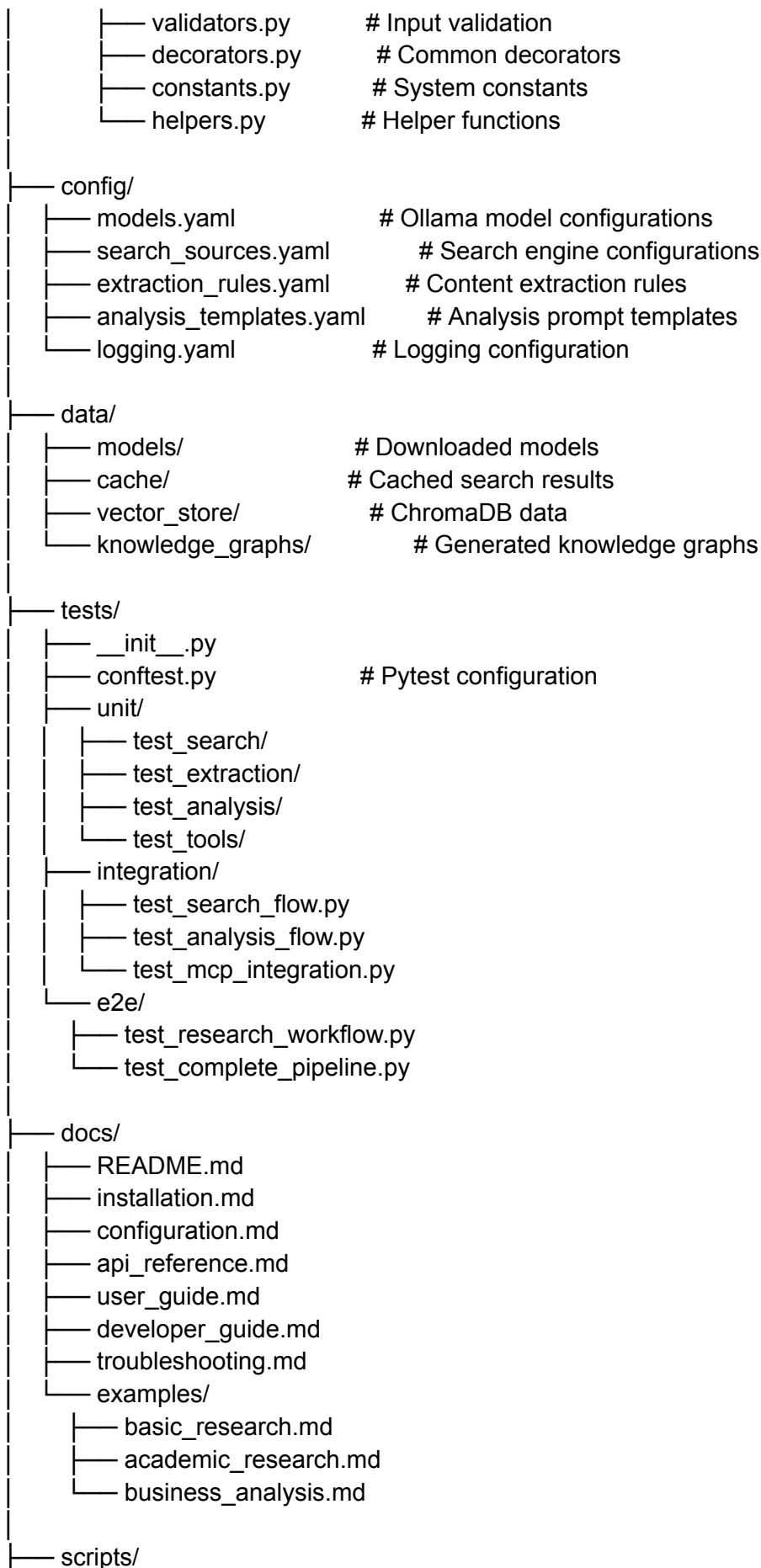


# Project Structure

ai\_research\_assistant\_mcp/



```
├── summarizer.py      # Content summarization
├── insight_extractor.py # Key insight identification
├── fact_checker.py     # Cross-reference verification
├── sentiment_analyzer.py # Sentiment analysis
├── topic_modeler.py    # Topic modeling
├── analysis_utils.py   # Analysis utilities
├── llm/
│   ├── __init__.py
│   ├── ollama_client.py # Ollama integration
│   ├── langchain_chains.py # LangChain workflows
│   ├── prompt_templates.py # Prompt management
│   ├── model_manager.py # Model loading and management
│   └── llm_utils.py     # LLM utilities
├── storage/
│   ├── __init__.py
│   ├── vector_store.py # ChromaDB integration
│   ├── cache_manager.py # Result caching
│   ├── knowledge_graph.py # Graph storage and retrieval
│   ├── session_manager.py # Session data management
│   └── storage_utils.py # Storage utilities
├── tools/
│   ├── __init__.py
│   ├── research_tools.py # Core research MCP tools
│   ├── analysis_tools.py # Analysis MCP tools
│   ├── export_tools.py # Export and reporting tools
│   ├── utility_tools.py # Utility MCP tools
│   └── tool_schemas.py # Tool input/output schemas
├── reports/
│   ├── __init__.py
│   ├── report_generator.py # Report compilation
│   ├── template_manager.py # Report templates
│   ├── export_formats.py # Multiple export formats
│   └── visualization.py # Charts and graphs
├── models/
│   ├── __init__.py
│   ├── research_models.py # Research data models
│   ├── content_models.py # Content data models
│   ├── analysis_models.py # Analysis result models
│   └── response_models.py # API response models
├── utils/
│   ├── __init__.py
│   └── logger.py # Logging configuration
```



```

|   |— setup.sh           # Initial setup script
|   |— download_models.sh # Model download script
|   |— start_server.sh    # Server startup script
|   |— run_tests.sh       # Test execution script
|
|— examples/
   |— basic_usage.py
   |— academic_research.py
   |— market_research.py
   |— fact_checking.py
   |— knowledge_graph_demo.py

```

## Complete Free Requirements.txt

### # Core MCP & AI (100% Free)

Mcp

langchain

langchain-community

langchain-ollama

ollama

### # Free Vector Stores

chromadb

sentence-transformers

faiss-cpu

### # Free Web Scraping

selenium

beautifulsoup4

requests

duckduckgo-search

playwright

### # Free Document Processing

pypdf2

pdfplumber

pymupdf

python-docx

### # Free Academic Search

arxiv

scholarly

### # Free Data Processing

pandas

numpy

nltk

spacy  
textstat

# Free Visualization  
matplotlib  
networkx

# Free Utilities  
python-dotenv  
pydantic  
click  
rich