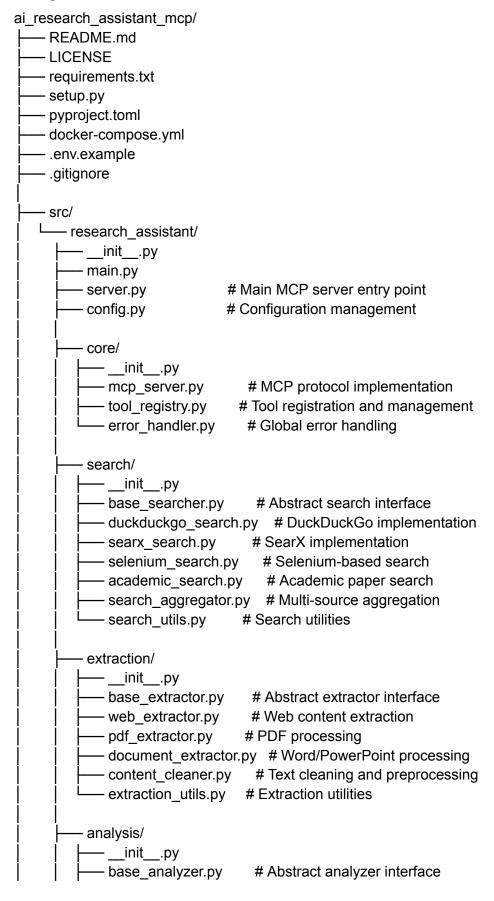
Project Structure



```
· 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
- Ilm/
    __init__.py
   - ollama_client.py
                        # Ollama integration
   langchain_chains.py
                          # LangChain workflows
   prompt_templates.py
                           # Prompt management
   model_manager.py
                           # Model loading and management
  Ilm_utils.py
                     # LLM utilities
storage/
  ___init___.py
   - vector_store.py
                        # ChromaDB integration
   cache_manager.py
                           # Result caching
                           # Graph storage and retrieval
  knowledge_graph.py
                           # Session data management
   session_manager.py
                       # Storage utilities
  storage_utils.py
- tools/
   - ___init___.py
   research_tools.py
                         # Core research MCP tools
                        # Analysis MCP tools
   analysis_tools.py
                        # Export and reporting tools
  export_tools.py
   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
                   # Logging configuration
  logger.py
```

```
validators.py
                           # Input validation
        - decorators.py
                            # Common decorators
       constants.py
                           # System constants
       helpers.py
                          # Helper functions
config/
  - models.yaml
                            # Ollama model configurations
   - search sources.yaml
                                # Search engine configurations
   extraction_rules.yaml
                              # Content extraction rules
  analysis_templates.yaml
                                # Analysis prompt templates
  logging.yaml
                           # Logging configuration
- data/
--- models/
                          # Downloaded models
                         # Cached search results
  - cache/
                           # ChromaDB data
  - vector_store/
  — knowledge_graphs/
                               # Generated knowledge graphs
- tests/
  - ___init___.py
                         # Pytest configuration
   - conftest.py
  – unit/
   — test_search/
     – test_extraction/
     – test_analysis/
  test_tools/
  - integration/
  — test_search_flow.py
     – test_analysis_flow.py
  test_mcp_integration.py
  – e2e/
    test_research_workflow.py
   — test_complete_pipeline.py
- docs/
  - README.md
  installation.md

    configuration.md

  - api_reference.md
  user_guide.md
  developer_guide.md
  troubleshooting.md
  – examples/
  basic_research.md

academic research.md

    business_analysis.md
- scripts/
```

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