

Configuration Manual

MSc Research Internship
Masters in Artificial Intelligence

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MSc Project Submission Sheet



School of Computing

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Configuration Manual

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Introduction

This manual provides essential configuration details for the Agentic System, a multiagent framework designed for energy sector analysis. For comprehensive documentation, including advanced configurations and troubleshooting, please refer to the [Agentic System Documentation](#).

Configuration Overview



- Configuration
- LLM Configuration
- Database Configuration

Configuration Overview

This section covers the various configuration options available in the Agentic System. Proper configuration is essential for optimal performance and integration with your specific environment.

Configuration Methods

The Agentic System supports multiple configuration methods, with the following precedence order (highest to lowest):

1. Environment variables
2. `..env` file
3. Configuration files in the `config/` directory
4. Default values

- Table of contents
- Configuration Methods
- Core Configuration Files
 - `config/settings.py`
 - `config/llm_settings.json`
 - `config/postgres_settings.json`
- Environment Variables
- Agent-Specific Configuration
- Configuration Helper
- Advanced Configuration



- Configuration
- LLM Configuration
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3. Configuration files in the `config/` directory
4. Default values

Core Configuration Files

`config/settings.py`

Contains the central configuration logic and default values for the entire system:

```
# Example settings.py structure
from pathlib import Path
import os
import json

BASE_DIR = Path(__file__).resolve().parent.parent
DATA_DIR = BASE_DIR / "data"
LOGS_DIR = BASE_DIR / "logs"

# Load settings from environment variables or default values
OPENAI_API_KEY = os.getenv("OPENAI_API_KEY", "")
OPENAI_API_BASE = os.getenv("OPENAI_API_BASE", "https://api.openai.com/v1")
OPENAI_MODEL = os.getenv("OPENAI_MODEL", "gpt-4")
```

- Table of contents
- Configuration Methods
- Core Configuration Files
 - `config/settings.py`
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 - `config/postgres_settings.json`
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Overview agentc-system

Configuration

LLM Configuration

Database Configuration

config/llm_settings.json

JSON configuration file for LLM-specific settings:

```

{
  "default_model": "gpt-4",
  "temperature": 0.1,
  "max_tokens": 4000,
  "models": {
    "gpt-4": {
      "system_message": "You are an expert energy analyst assistant..."
    },
    "gpt-3.5-turbo": {
      "system_message": "You are a helpful energy assistant..."
    }
  }
}

```

config/postgres_settings.json

Configuration for PostgreSQL database connections:

```

{
  "host": "localhost",
  "port": 5432,
  "database": "energy_data",
  "user": "postgres",
  "password": "",
  "ssl_mode": "prefer",
  "timeout": 30
}

```

Table of contents

- Configuration Methods
- Core Configuration Files
 - config/settings.py
 - config/llm_settings.json
 - config/postgres_settings.json
- Environment Variables
- Agent-Specific Configuration
- Configuration Helper
- Advanced Configuration

Environment Variables

Overview agentc-system

Configuration

LLM Configuration

Database Configuration

[↑ Back to top](#)

Environment Variables

Key environment variables that can be set:

Variable	Description	Default
OPENAI_API_KEY	OpenAI API key	Required
OPENAI_API_BASE	OpenAI API base URL	https://api.openai.com/v1
OPENAI_MODEL	OpenAI model to use	gpt-4
OPENAI_EMBEDDING_MODEL	Embedding model	text-embedding-ada-002
DATABASE_URL	SQL database URL	sqlite:///./data.db
VECTOR_DB_PATH	Vector database path	./vector_db
PLEXOS_DB_PATH	Plexos database path	""
LOG_LEVEL	Logging level	INFO
MAX_RETRIES	Max API retries	3
TIMEOUT	Request timeout	30

Table of contents

- Configuration Methods
- Core Configuration Files
 - config/settings.py
 - config/llm_settings.json
 - config/postgres_settings.json
- Environment Variables
- Agent-Specific Configuration
- Configuration Helper
- Advanced Configuration

Agent-Specific Configuration & Configuration Helper

Overview

Configuration

LLM Configuration

Database Configuration

↑ Back to top

Agent-Specific Configuration

Each agent has its own configuration parameters that can be adjusted:

- [LLM Settings](#) - Configuration for language models
- [Database Settings](#) - Database connection parameters
- [Calculation Settings](#) - Parameters for the calculation engine
- [Logging Settings](#) - Log levels and formatting options

Configuration Helper

The system includes a `config_helper.py` utility for simplified configuration management:

```
from config_helper import get_config

# Load specific configuration
postgres_config = get_config("postgres")
openai_config = get_config("openai")

# Access configuration values
database_name = postgres_config["database"]
api_key = openai_config["api_key"]
```

Table of contents

- Configuration Methods
- Core Configuration Files
 - `config/settings.py`
 - `config/llm_settings.json`
 - `config/postgres_settings.json`
- Environment Variables
- Agent-Specific Configuration
- Configuration Helper
- Advanced Configuration

Please # in this field.

Search Bar

Overview

Configuration

LLM Configuration

Database Configuration

↑ Back to top

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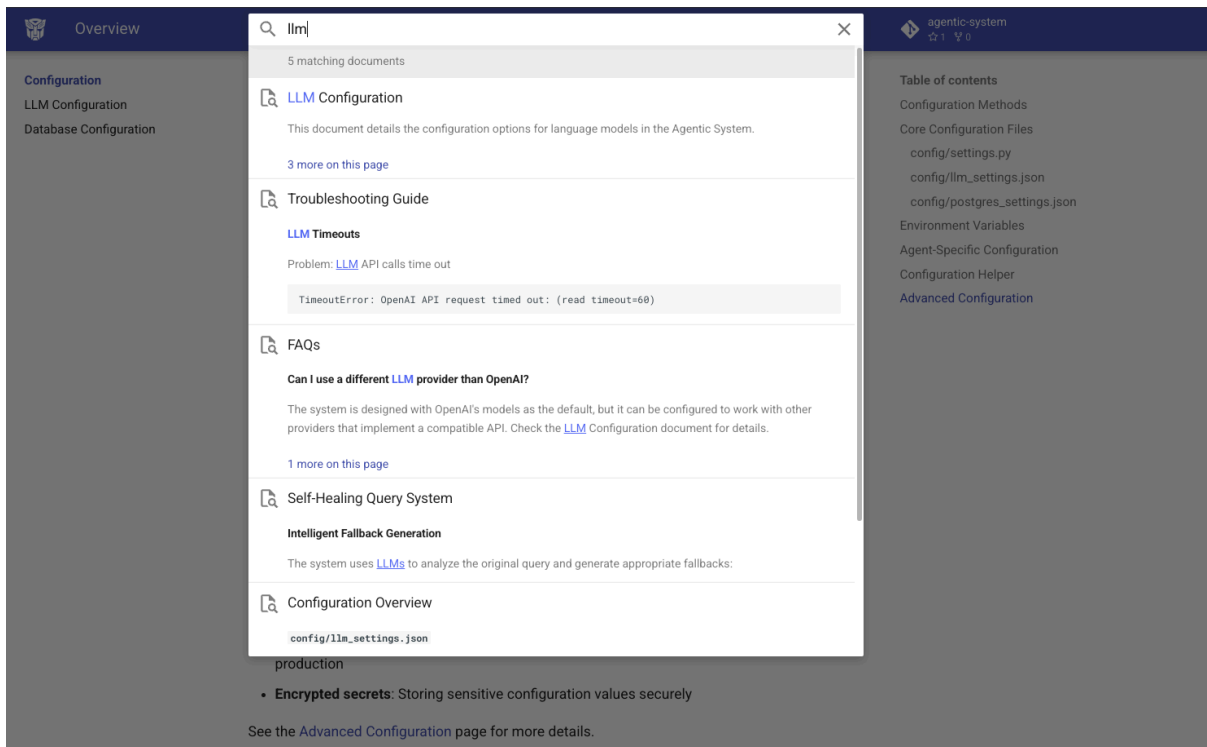
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Table of contents

- Configuration Methods
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For any doubts or related information search the search bar provided at the top right is very helpful.

Conclusion

This setup guide provides a background knowledge of the Agentic System's setup and operational parameters. Based on these guidelines, users will be able to. Regarding further technical details and customization, as well as troubleshooting guides, consider the detailed online documentation that can be accessed in the given link. The constant upgrades, as well as, community feedback ensure that the Agentic System remains a viable and adaptable instrument of energy industry analysis.