Dashei

AI powered Market analysis Dashboard tool | Made as an Assignment for AI Planet

By Adarsh Tiwari

Technical Analysis Report

January 23, 2025

Summary

Dashie is a comprehensive AI-powered analysis platform that automates company research, industry analysis, and strategic recommendations. This report provides a detailed technical analysis of the platform's implementation, architecture, and potential enhancements.

---

1. Problem Statement

Organizations face several challenges when implementing AI/ML strategies:

- Time-consuming market research and analysis
- Difficulty in identifying relevant AI use cases
- Challenges in finding appropriate implementation datasets
- Need for comprehensive strategic recommendations

Dashie addresses these challenges through automated analysis and recommendation generation.

---

2. Technical Implementation

2.1 Core Technologies

The platform utilizes:

- Frontend: Streamlit
- AI Integration: OpenAI GPT-4 (gpt-4o-mini model)
- Search Capabilities: Exa API
- Dataset Sources: Kaggle, HuggingFace, GitHub
- Language: Python

2.2 Main Components

MarketResearchAgent Class

The central component managing:

- API integrations
- Industry analysis
- Research coordination
- Use case generation
- Resource collection

Research Functionality

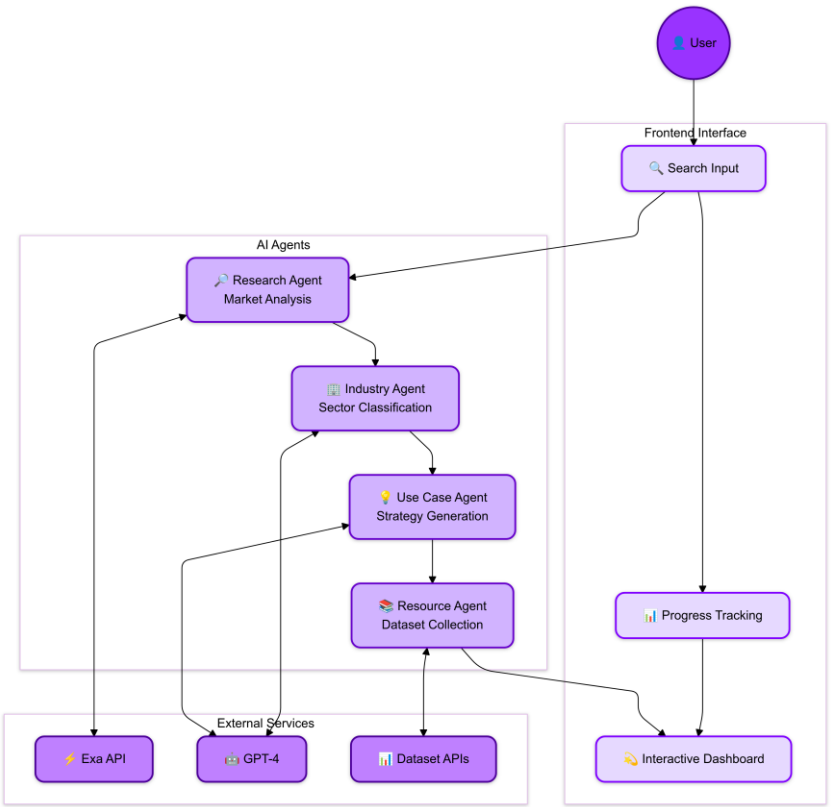
Implements:

- Automated industry classification
- Multi-query research execution
- Structured data aggregation
- Comprehensive error handling

---

3. System Architecture

3.1 Architecture diagram



3.2 Component Structure

1. User Interface Layer
    - Search input interface
    - Progress tracking system
    - Results dashboard
    - Interactive tabs
2. Analysis Layer
    - Industry determination
    - Market research
    - Use case generation
    - Resource mapping
3. External Services Layer
    - Exa API integration
    - GPT-4 implementation
    - Dataset platform connections

3.3 Data Flow

1. Input Processing
    - Company name validation
    - Industry classification
    - Context preparation
2. Research Execution
    - Multiple query processing
    - Error handling
    - Result aggregation
3. Analysis Generation
    - Use case identification
    - Resource matching
    - Report compilation

---

4. Key Features

4.1 Research and Analysis

- Automated industry classification
- Comprehensive market research
- Strategic opportunity identification
- Dataset resource mapping

4.2 User Interface

- Progress tracking
- Tabbed result presentation
- Downloadable reports
- Interactive dashboard

4.3 Error Handling

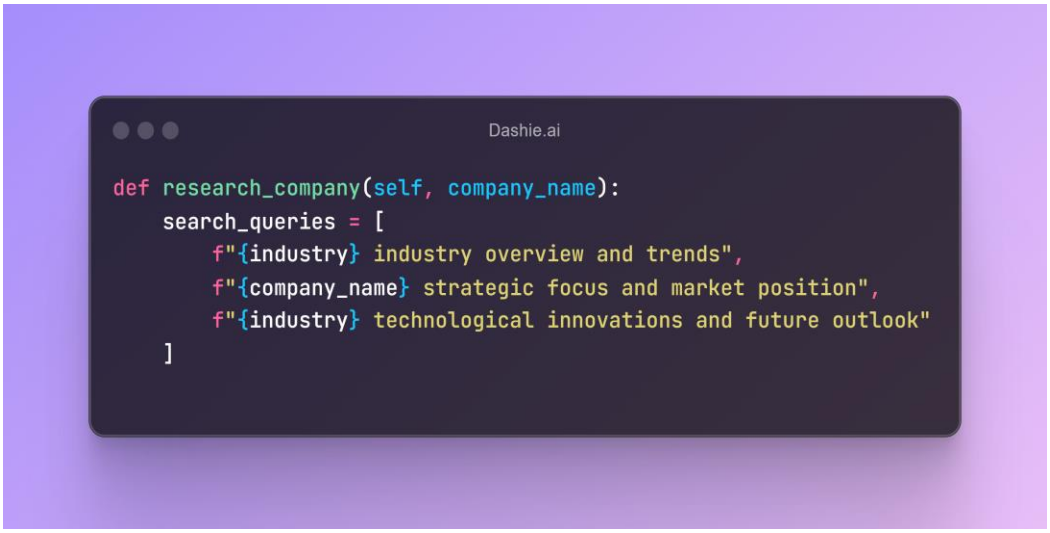
- API error management
- User input validation
- Graceful failure recovery
- User-friendly error messages

---

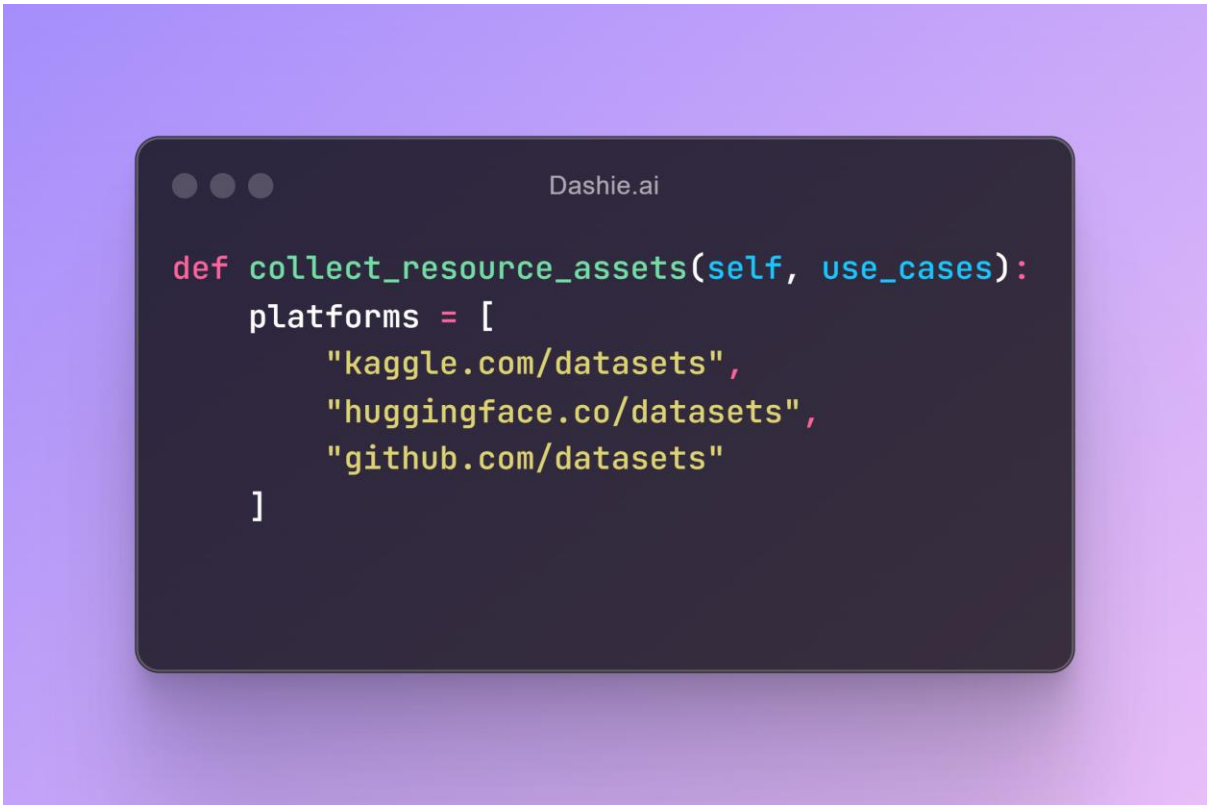
5. Code Analysis

5.1 Industry Analysis Implementation

5.2 Research Execution



5.3 Resource Collection



---

6. Areas for Enhancement

6.1 Performance Optimization

- Caching implementation
- Parallel processing
- Response optimization
- Batch processing

6.2 Feature Expansion

- Competitor analysis
- Historical trending
- Custom templates
- Advanced filtering

6.3 Data Integration

- Additional data sources
- Real-time market data
- Financial metrics
- News integration

---

7. Security Considerations

Current Implementation

- Streamlit secrets management
- Basic error handling
- Input validation

Recommended Improvements

- Advanced encryption
- Enhanced authentication
- Comprehensive logging
- Access control

---

8. Conclusion

Dashie demonstrates a well-structured implementation of an AI-powered analysis platform with:

- Modular architecture
- Comprehensive error handling
- Intuitive user interface
- Structured data processing

While the current implementation provides a solid foundation, opportunities exist for enhancement in:

- Performance optimization
- Feature expansion
- Security improvements
- Data integration

The platform successfully automates complex analysis tasks while maintaining extensibility for future improvements.

Thank you for going through my report for the Assignment given by AI Planet
I hope the deliverables were delivered properly.