

# InVitro Capital – Case Study Presentation

## Project Summary

A FastAPI microservice was developed to analyze product reviews. It returns sentiment, readability score, and improvements.

## Architecture

The solution is structured in modular layers:

- FastAPI as the main framework.
- Separate logic for sentiment, readability, and suggestions.
- Automated testing with Pytest.
- Docker for deployment and GitHub Actions for CI.

## AI Simulation

Sentiment is simulated using rule-based logic with keyword counts.

Readability is approximated by the average sentence length.

Suggestions check for excessive length or use of all caps.

## Future AI Integration

The architecture allows easy integration with real AI models such as:

- HuggingFace transformers for NLP tasks.
- TextStat or spaCy for better readability metrics.
- LLMs like GPT-4 or LLaMA for generative feedback.

## Visual Interface

A Streamlit-based UI is included for testing and demonstration, allowing users to input reviews and visualize the results.

## AI Tools Used

- GitHub Copilot: Assisted with scaffolding and logic generation.
- ChatGPT: Helped with architectural design, CI setup, and documentation.