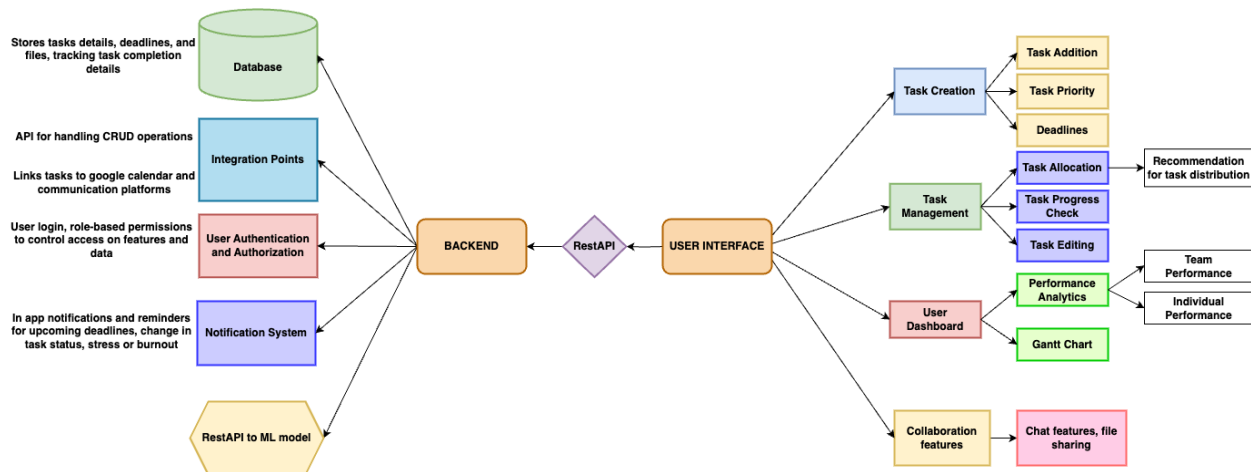
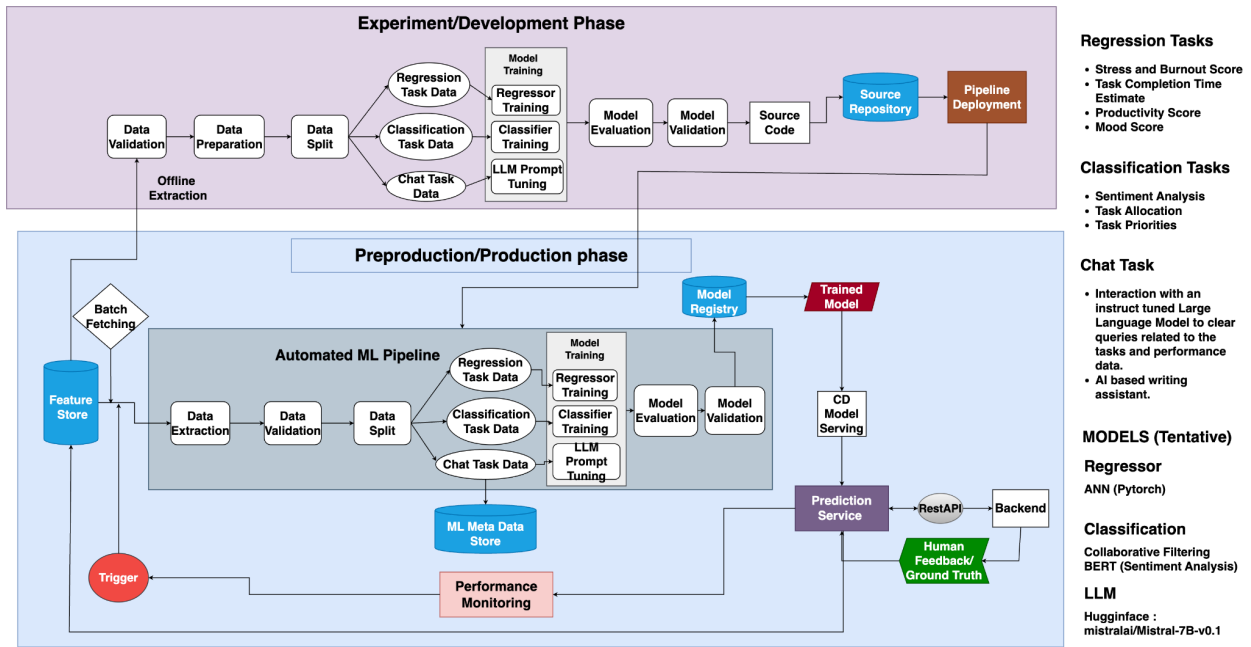


Project Report: AI-Enabled Agile Software Development Management Too



Project Report: AI-Enabled Agile Software Development Management Tool

Project Overview:

This project presents an AI-enabled tool designed to optimize agile software development management. Leveraging advanced machine learning models and natural language processing, it streamlines task management, employee allocation, and performance analytics, enhancing efficiency and employee well-being.

Key Features:

Task Management with Zephyrus-7B LLM:

Task Decomposition: Admins input tasks, which are then divided into subtasks using few-shot prompting with the Zephyrus-7B Large Language Model (LLM).

Subtask Classification: A BERT classifier, implemented using Hugging Face, categorizes these subtasks into specific roles: frontend, backend, R&D, and HR.

Employee Task Allocation:

Role-Based Allocation: Tasks are allocated based on employee roles and current project count, as stored in the database.

Stress and Burnout Assessment: A regression model, developed with PyTorch, assesses employee stress and burnout levels using database information.

Performance Prediction and Analysis:

Completion Time Prediction: The tool predicts the task completion time using methodologies similar to the stress assessment.

Employee Reviews: Zephyrus-7B LLM generates text-based performance reviews for each employee, drawing on database data.

Employee Performance Analytics:

Analytics Dashboard: Employees can access their performance analytics and morale, predicted using machine learning.

Chatbot Integration:

Database Inquiry: A chatbot, powered by Zephyrus-7B LLM and Retrieval Augmented Generation, facilitates interactive database queries by admins.

Technical Stack:

Project Report: AI-Enabled Agile Software Development Management Tool

Core Technologies: Python, PyTorch, Hugging Face

Web Development: MERN Stack (MongoDB, Express.js, React, Node.js)

Containerization: Docker

Cloud Services: AWS SageMaker for model training and deployment

Conclusion:

This AI-enabled tool represents a significant advancement in agile software development management. By integrating cutting-edge technologies like LLMs, PyTorch, Hugging Face, and cloud services, it offers a robust solution for task allocation, performance prediction, and analytics, ultimately fostering a more efficient and employee-friendly work environment.