Research Proposal & Resources: AI-Powered Refactoring Task Prioritization in Agile Sprint Planning

Research Proposal

Title: Automated Code-Smell Prioritization Integrated with Agile Platforms For Automatic Ticket Creation And Ranking

Introduction:

Refactoring and code smell remediation are critical to the software life cycle. However, prioritizing these tasks in sprint planning is often manual and intuition-driven. This research proposes the development of an AI-driven tool that automatically detects code smells, scores, and prioritizes refactoring tasks based on project deadlines, team capacity, and expected productivity gains. The system will integrate with agile tools like Jira or Azure DevOps to dynamically update sprint backlogs with actionable recommendations.

Objectives:

• Build AI models for automated detection and scoring of code smells.

• Develop prioritization algorithms combining code quality, project timelines, and team workload.

• Create integration with popular agile project management platforms for dynamic backlog updates.

• Evaluate the approach on open-source projects to measure productivity impact and backlog quality improvements.