AI-POWERED CODE SEARCH UTILITY

A TRANSFORMATIVE CHATBOT THAT REVOLUTIONIZES THE WAY DEVELOPERS INTERACT WITH THEIR CODEBASE.

PROBLEM IDENTIFICTION

INEFFICIENT CODE RETRIEVAL
Searching through extensive repositories can be time-consuming, leading to wasted effort and reduced productivity.

INCONSISTENCIES IN CODE STANDARDS
Developers inadvertently using code that does not comply with internal technical guidelines, leading to inconsistencies in code quality

INSUFFICIENT DOCUMENTATION
There is often a lack of clear instructions and guides, making it harder for developers to utilize available search tools effectively.

ONBOARDING DEVELOPERS CHALLENGES
New team members often find it difficult to locate relevant code snippets, which can prolong their learning curve and hinder their integration into the team.

Team Members

1. Rajat Karad
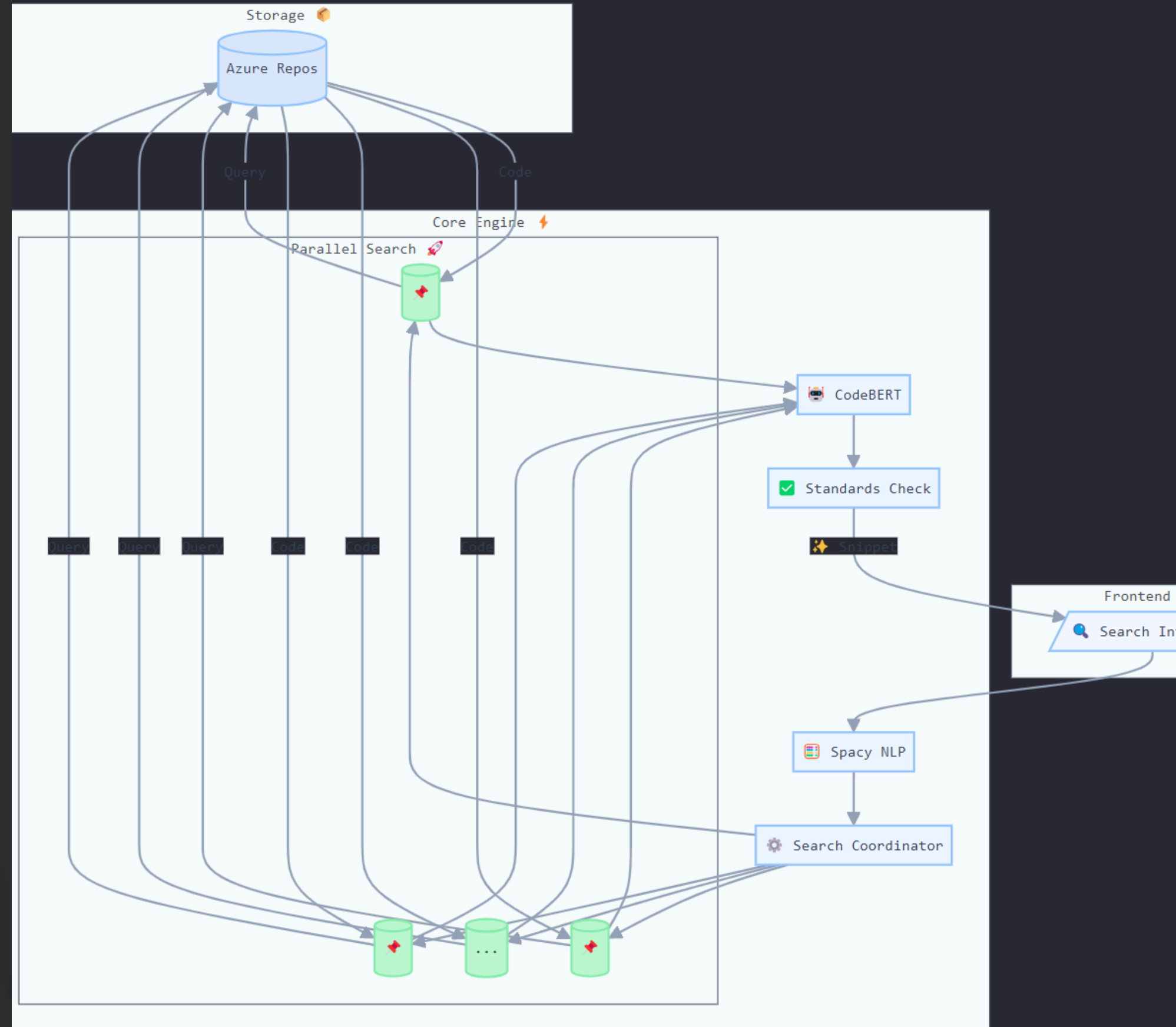2. Arjun Thokare
3. Varad Kamthe
4. Ishan Undre

ENHANCED QUERY PROCESSING

NLP-Powered Search

Unlike traditional code search tools that rely on exact keyword matching, our solution leverages natural language processing to understand the user's intent and retrieve the most relevant code samples, even when the query doesn't contain the exact terms used in the codebase.

Semantic Understanding

The AI-powered chatbot goes beyond surface-level keyword matching, employing advanced semantic analysis to comprehend the context and meaning behind the user's query. This ensures that the retrieved code snippets are truly relevant and useful.

NATURAL LANGUAGE QUERIES

- **USER-FRIENDLY INPUT**

  Users can input full sentences or questions, eliminating the need for exact keywords or technical search commands

- **INTELLIGENT QUERY INTERPRETATION**

  The chatbot's NLP engine analyzes user intent, providing accurate and relevant code snippets based on the user's query

AZURE DEVOPS INTEGRATION

- **DIRECT CODEBASE ACCESS**

  Users can easily retrieve code snippets from their organization's Azure DevOps repositories.

- **LEVERAGE EXISTING INFRASTRUCTURE**

  The chatbot utilizes Azure DevOps, allowing teams to build on their current tools and workflows without disruption.

AUTOMATED CODE COMPLIANCE AND STANDARDS ENFORCEMENT

- **PREDICTIVE ANALYTICS**

  The chatbot automatically checks code snippets against company-defined coding standards, ensuring compliance during retrieval.

- **DISCREPANCY HIGHLIGHTING**

  Any deviations from coding standards are immediately flagged, enabling developers to address issues proactively and maintain consistency

FUTURE SCOPE

- **IDE INTEGRATION**

  Allow the chatbot and search functionality to be accessible directly within the developer's workspace.

- **DISTRIBUTED ELASTICSEARCH CLUSTER**

  scaling Elasticsearch to a distributed cluster for better performance and faster searches.

- **CACHING MECHANISM**

  scaling Elasticsearch to a distributed cluster for better performance and faster searches.