

Blackbox.ai Track

Code Sage

LLM-Powered Code Review Tool



GitHub

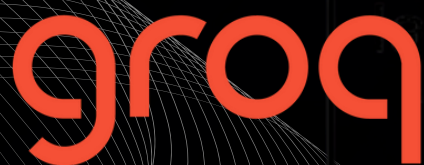
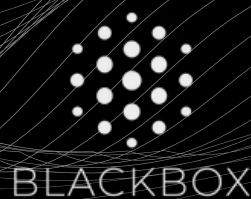
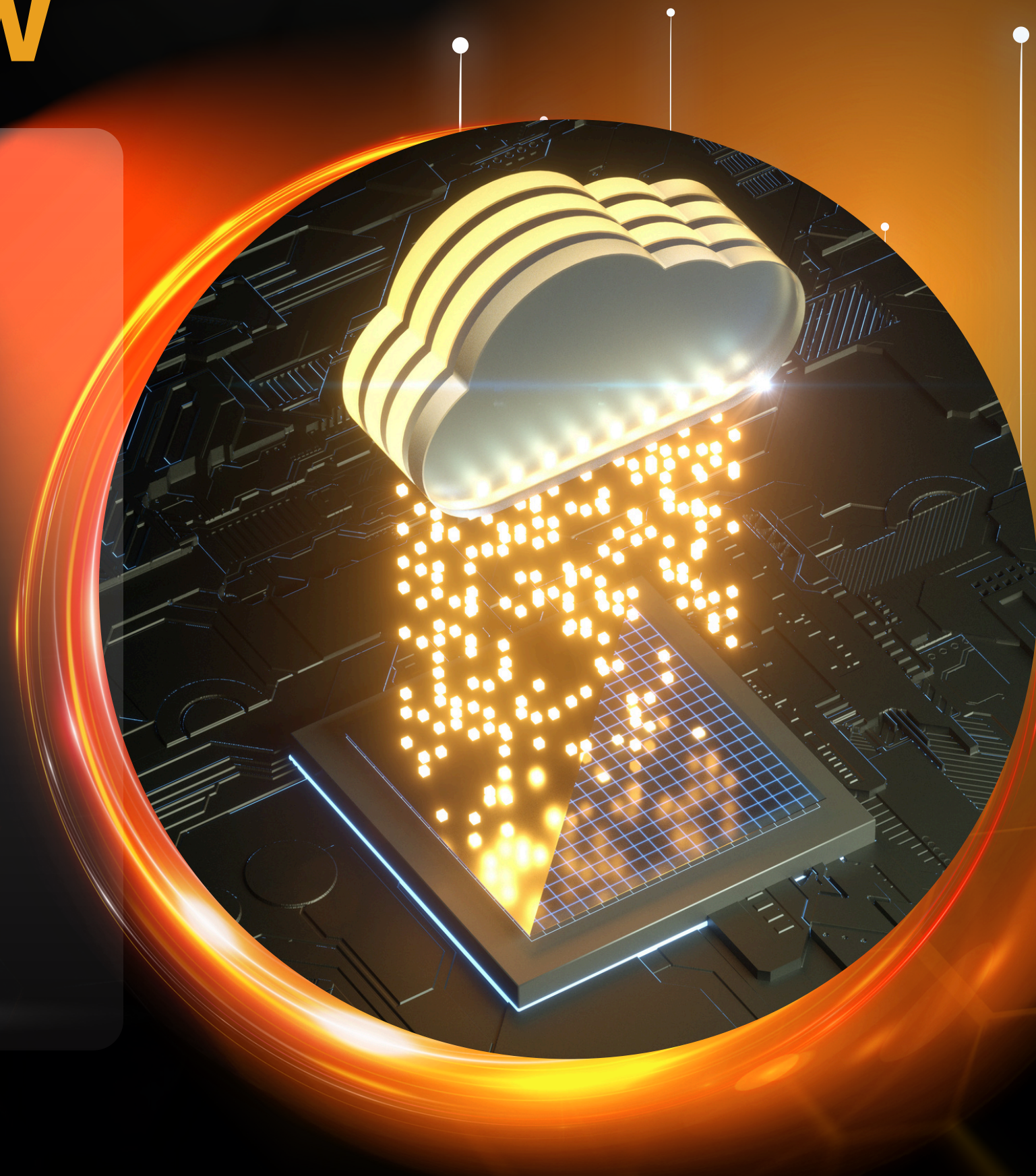
groq





Project Overview

- Our project leverages AI to streamline and automate the code review process.
- It analyzes GitHub pull requests and delivers natural language feedback.
- Powered by:
 - BLACKBOX.AI Coding Agent
 - Groq API (ultra-fast LLM inference)
 - Meta's LLaMA model.





Problem Statement

- Manual code reviews are slow and prone to error.
- Developers waste time finding minor issues.
- Lack of consistency in reviews across teams.



Our Solution



› An AI-powered tool that analyzes pull requests and automatically suggests improvements.

› Uses fast LLM inference from Groq and prompt engineering for accurate reviews.

› Saves time, improves quality, and boosts productivity.



Technical Architecture

GitHub Pull Requests Integration



Fetch PR + Diffs: The system starts by fetching pull requests (PRs) and their diffs from GitHub.

AI Processing Layer



LLaMA + Blackbox Agent in conjunction to generate feedback on the code.

Real-Time Insights

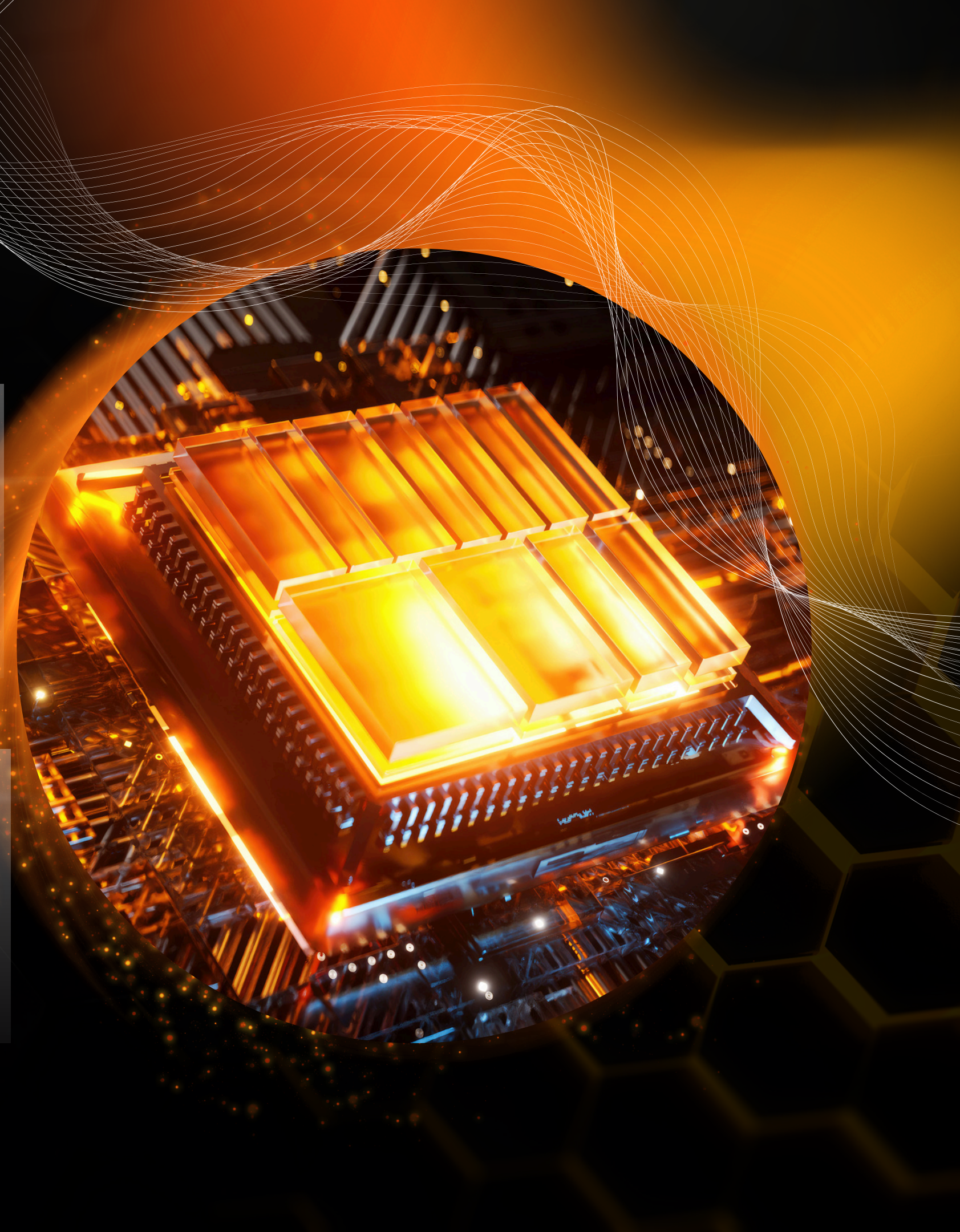


Groq API for efficient communication between the AI models and the backend, ensuring quick responses.

User-Friendly Interfaces



UI is developed using React, providing a seamless and interactive experience for users.



Tech Stack



Backend

Python, FastAPI



AI

Groq API, LLaMA 3
(Meta), Blackbox.ai
Agent
GitHub API



Frontend

React, HTML/CSS and
JS, Streamlit



Key Features

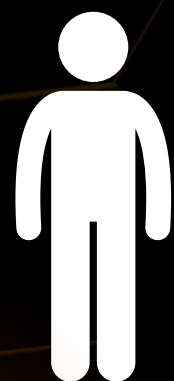


**AI-Powered
Code Review**

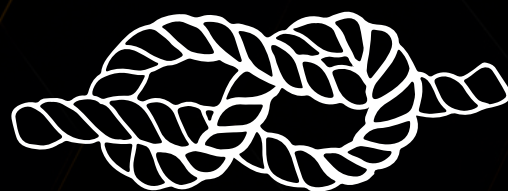


**GitHub PR
Integration**

**grogg Fast Response
with Groq API**



**Human-
readable
Feedback**



**Extensible with
other AI models**



**LLAMA + BlackBox
Intelligence**

Challenges we faced

Challenges	Our Solution
GitHub PR parsing	Used GitHub API effectively
LLM response formatting	Prompt engineering + JSON wrapping
UI Design	Used Streamlit for simplicity





Future Scopes



Team Collaboration

Share reviews with team members, add comments and collaborate on code improvements



Multi Repository Support

Review PR across multiple repositories and organizations



Enterprise Security

Advanced security features, SSO integration and compliance certifications



Analytics Dashboard

Track code quality metrics, review statistics, and team performance insights



Multi Language Support

Support for additional programming languages and frameworks



Custom Rule Engine

Create custom review rules and guidelines for your teams specific needs





Meet Our Team



Fouzia Akbar



Faiqa Rafiq



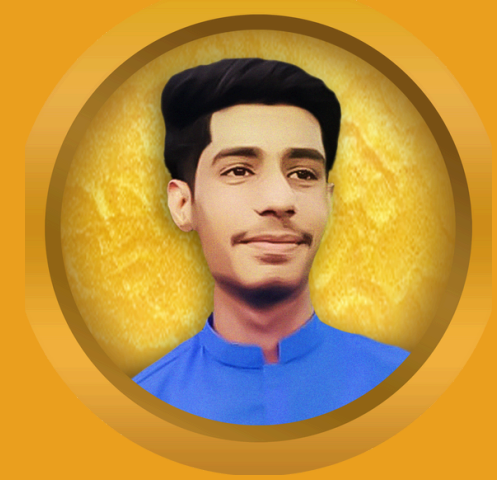
Khabab Akhtar



Sabina Oaie



**Muhammad
Azeem**



Abdullah Jameel



Thank You