



Cloudflare Is Not Available

Code Fest: Hackathon

DeepCheck

Bringing Transparency and Accuracy to AI Credit Scoring



UNIVERSITI
MALAYA



Track 2: An LLM-Based Risk Assessment for AI Credit Scoring System

The Problem

✓ Problem Focused

- Traditional credit models only use structured numerical data
- Applicant text is ignored

✓ Consequences

- Hidden risk go undetectable
- Creditworthy applicants get unfairly rejected



Our Solution: DeepCheck

DeepCheck: An LLM-Based Risk Assessment Dashboard



Industries can't reliably analyze
unstructured applicant text



Credit Analyst



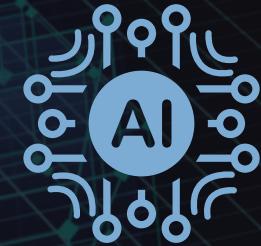
- LLM analyzes the applicant's story
- Text insights combined with financial data
- Produces a single, explainable risk assessment

How it Works: A Transparent, Two-Stage Hybrid Architecture



LLM-Based Text Analysis

- Extracts risks
- Extracts strength
- Produces a text-based risk score

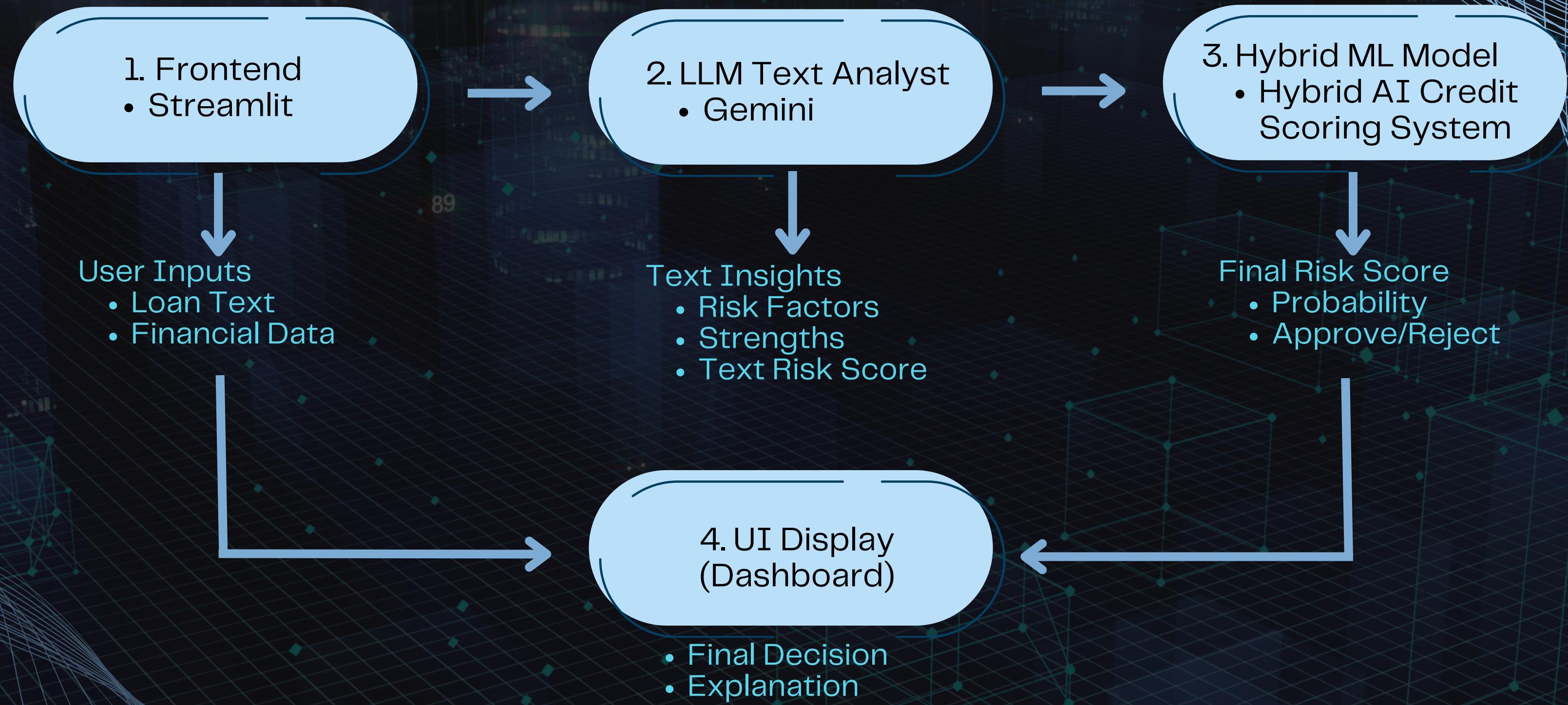


Hybrid Decision Model

- Combine LLM insights + structured financial data
- ML model generates the final explainable risk score



System Architecture



Key Features

Hybrid Data Fusion

- Combines applicant text + financial data for a complete risk profile

Automated Text Insights

- LLM identifies risks and strengths using true context—not just keywords

Radical Transparency

- Clear explanations for every decision
- Fully auditable for financial compliance

Live Demo

← → ⌛ hackathon112025-sxahghfka9xuedaeytk5hv.streamlit.app

New Assessment

Recent

Case #1

Help

Current

Case #1

DeepCheck Credit Assessment

by Cloudflare-Is-Not-Available AI

Income: 5000 | Loan: 10000 | DTI: 0.30 | Term: 36

Age: 30 | Dep.: 0 | Hist.: 5

Reason for Loan: I need this loan to expand my small bakery business.

Predict Risk

Total Risk Score: **73.0/100** (REJECT LOAN : High Risk)

Confidence: **75%** (Math + Story Model)

Analysis Data

AI Summary: Expanding a small business is generally a legitimate purpose, but the lack of detail increases risk slightly; further investigation is needed to assess the applicant's financial planning and the urgency of the loan.

Financial Flags: Math model predicts HIGH risk.

Legitimacy: Responsibility: Urgency: Clarity:

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Technology We Used

Backend & API

FastAPI

- For building our high-performance, scalable API

AI & Machine Learning (The Brains)

Google Generative AI

- Our “Text Brain” - for understanding the applicant’s story

Scikit-learn

- Our “Math Brain” - for making predictions from the financial data

Data & Utilities

Pandas

- For structuring and preparing all our data

Python-dotenv

- For securely managing our API keys - a critical best practice

Our Innovation



Explainable outputs, not just scores

- Provides narratives and reasoning instead of black-box numbers



Interpretability from day one

- Transparent, auditable, and trustworthy for financial decision-making



Different from current banking models

- Goes beyond opaque scoring models toward actionable, AI-assisted insights



Human-in-the-loop design

- Supports analysts rather than replacing them; reduces bias and improves consistency



Prototype built for real-world usability

- Practical, analyst-friendly, and aligned with regulatory expectations

THANK YOU

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