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LIST OF ABBREVIATIONS

AI – Artificial Intelligence

XAI – Explainable Artificial Intelligence

CNN - Convolutional Neural Network

RNN - Recurrent Neural Network

SHAP - SHapley Additive exPlanations

LIME - Local Interpretable Model-agnostic Explanations

RAM – Random Access Memory

VCS – Version Control System

ABSTRACT

As Artificial Intelligence (AI) permeates our lives, influencing everything from loan approvals to medical diagnoses, a critical question emerges: can we understand how AI models arrive at their decisions? Enter Explainable AI (XAI), a transformative field that strives to demystify the inner workings of these complex algorithms. This project delves into the practical application of XAI techniques, aiming to bridge the gap between the opaque nature of AI models and human comprehension.

By integrating XAI methodologies, we can illuminate the "why" behind AI predictions. This newfound transparency fosters trust and empowers users with a deeper understanding of the rationale governing AI decisions. Imagine a world where loan applicants can comprehend the factors influencing loan approval/rejection, or where medical professionals gain insights into the reasoning behind AI-powered diagnostic tools. XAI empowers informed decision-making and fosters collaboration between humans and AI.

This project goes beyond theoretical exploration. It equips you with the tools and knowledge to implement XAI in your own machine learning endeavors. We explore practical considerations such as hardware and software requirements, along with valuable resources to guide your journey. Furthermore, the project investigates the potential for XAI across various domains, from real estate prediction to loan approval systems and beyond. By demonstrating the applicability of XAI in diverse scenarios, we pave the way for its widespread adoption.

Ultimately, this project aspires to contribute to a future where AI development is guided by principles of responsibility and transparency. By fostering a future where humans and AI work in concert, we can harness the immense potential of AI for the betterment of society. This exploration of XAI is not just about unveiling the black box; it's about unlocking a future where AI can be a trusted and powerful force for good.