Phishing URL Detection using AI/ML

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Theme: Blockchain & Cybersecurity
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Problem Statement

- • Phishing attacks are growing rapidly and target unsuspecting users.

- • Traditional blacklist methods fail against newly created phishing sites.

- • Sensitive user data like banking credentials, passwords, and personal details are at risk.

- • Need for an AI-driven real-time phishing detection system.

Proposed Solution

- • Develop an AI/ML-powered phishing detection system.

- • Feature extraction: URL length, HTTPS, domain age, suspicious keywords.

- • ML Algorithms: Random Forest, SVM.

- • Deep Learning: CNN + BiLSTM for high accuracy.

- • User-friendly Web App & Browser Extension for real-time detection.
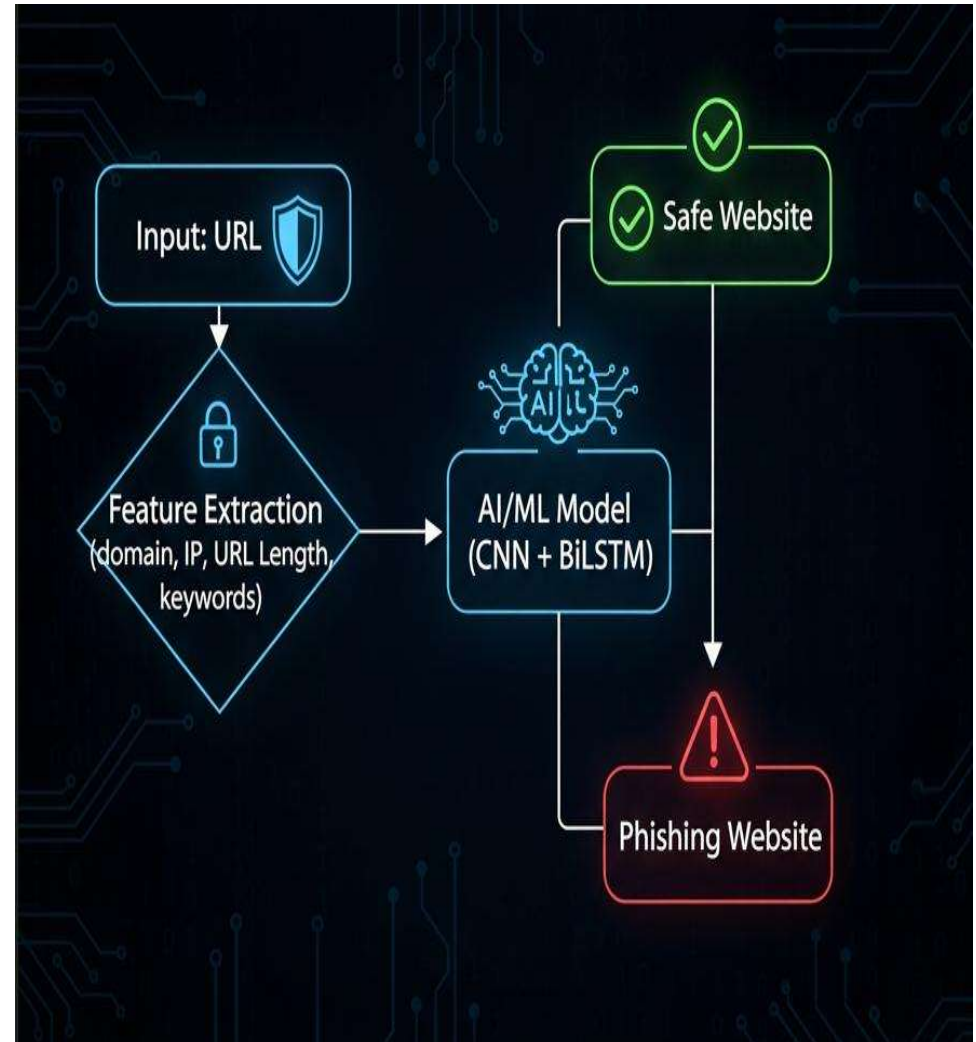
Minimum Viable Product (MVP)

- MVP 1: Python/ML script to classify Safe vs Phishing URLs.

- MVP 2: Web App (Flask/Streamlit) where users can input URLs.

- MVP 3: Real-time detection prototype (Browser extension / Auto-check).
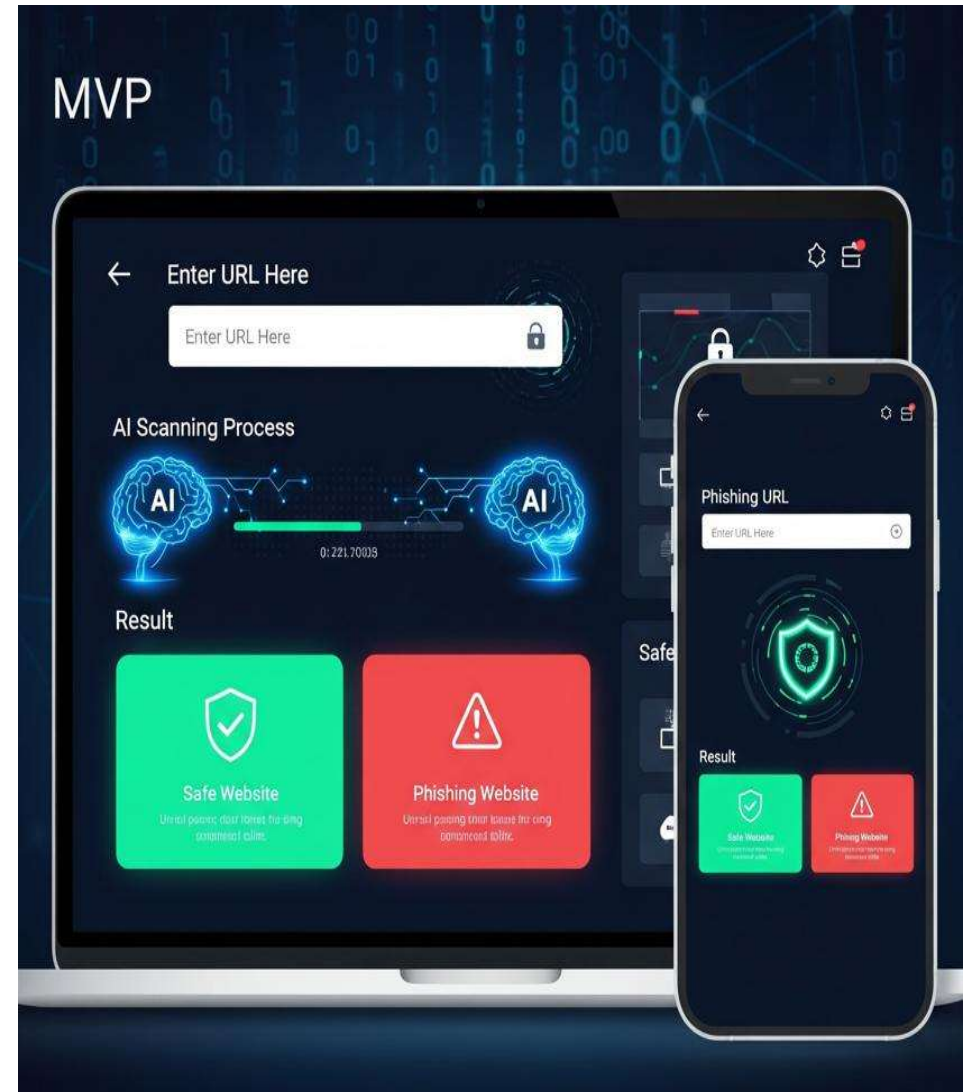
Technology Stack

- • Programming: Python
- • Libraries: Scikit-learn, TensorFlow/Keras
- • Datasets: PhishTank, Kaggle
- • Tools: VS Code, Jupyter Notebook
- • Deployment: Flask / Streamlit / Django
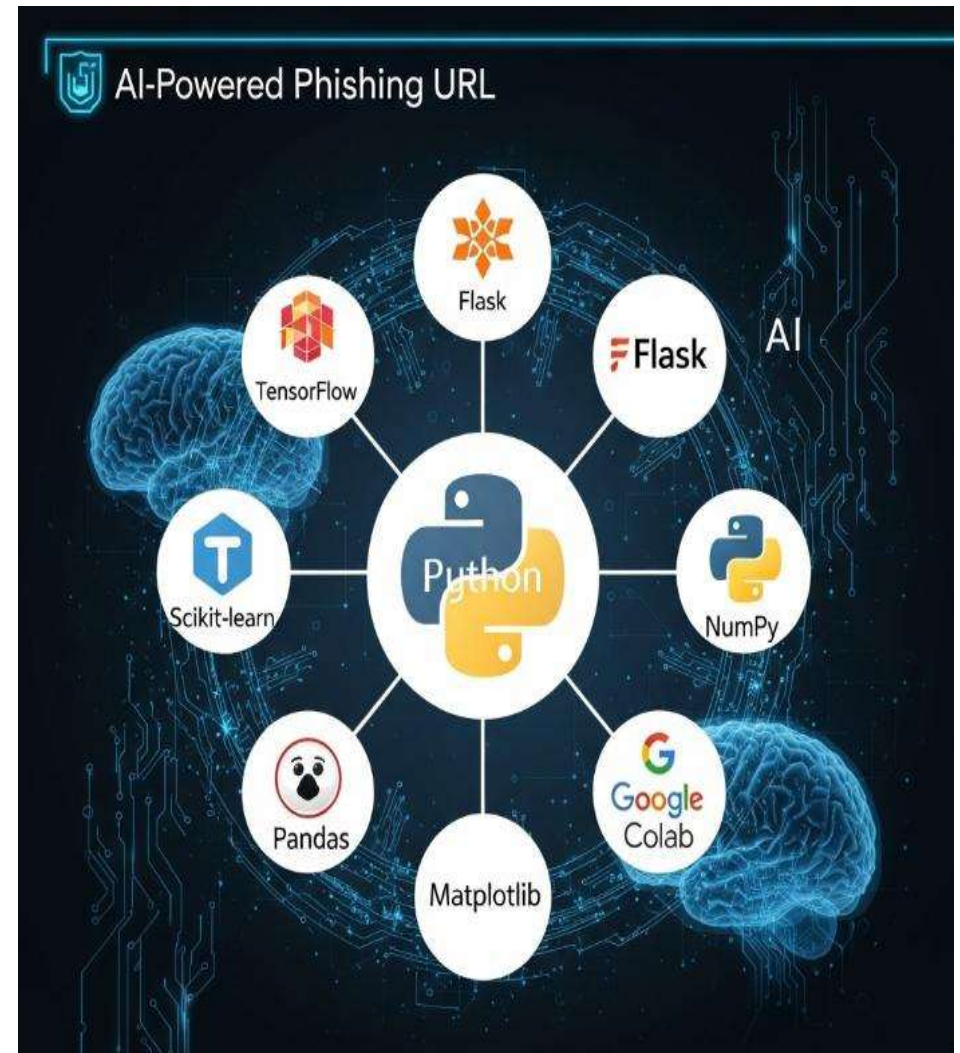
Uniqueness & Innovation

- • Combines Machine Learning + Deep Learning for improved accuracy.

- • Real-time phishing URL detection.

- • Simple and user-friendly interface.

- • Scalable to enterprise cybersecurity needs.

- • AI-driven continuous learning against new threats.
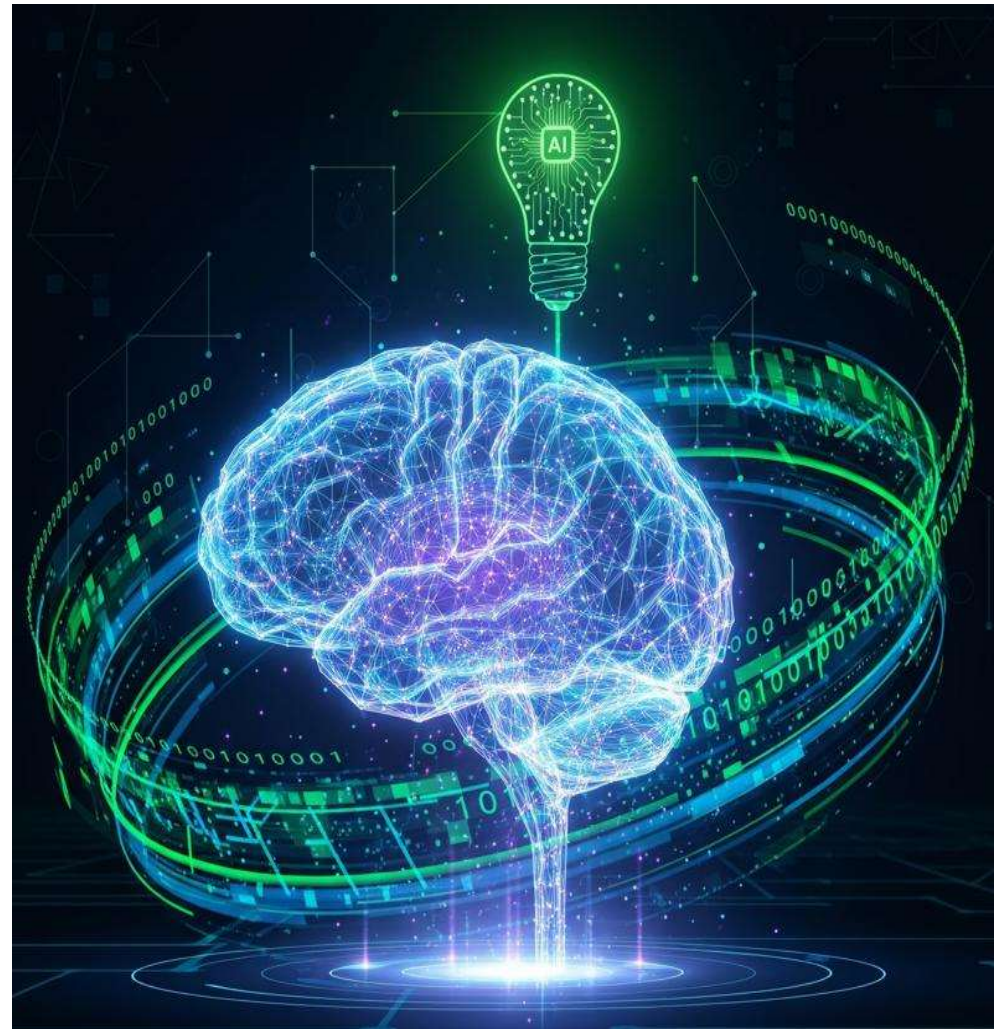
Future Scope

- • Browser extensions for Chrome, Edge, Firefox.
- • Mobile app for Android and iOS.
- • Enterprise-level integration for organizations.
- • Email service integration for phishing prevention.
- • Cloud-based phishing monitoring and reporting.