Project Title -AI Based Network Intrusion Detection System

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[AICTE ID : STU68f8ad25150c91761127717]

PROBLEM STATEMENT

- With the rapid growth of computer networks, cyber attacks such as malware, denial of service, and unauthorized access have increased significantly. Traditional security systems like firewalls cannot detect all modern attacks. Therefore, an intelligent system is required to automatically detect suspicious activities in a network with high accuracy and low response time.

Project Description

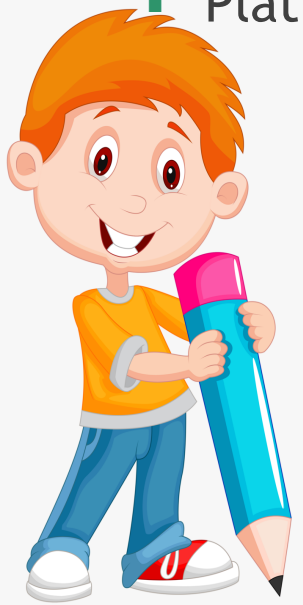
SmartShield-Lite is a lightweight AI based intrusion detection system designed for small and medium networks. The system uses machine learning to analyze network traffic and classify it as normal or malicious. A feature optimized Random Forest model improves detection accuracy and reduces processing time. The system also generates alerts when intrusion is detected.

WHO ARE THE END USERS?

- Network Administrators
- • Colleges and Computer Labs
- • Small Offices and Startups
- • Cyber Security Students
- • Internet Service Providers

Technology Used

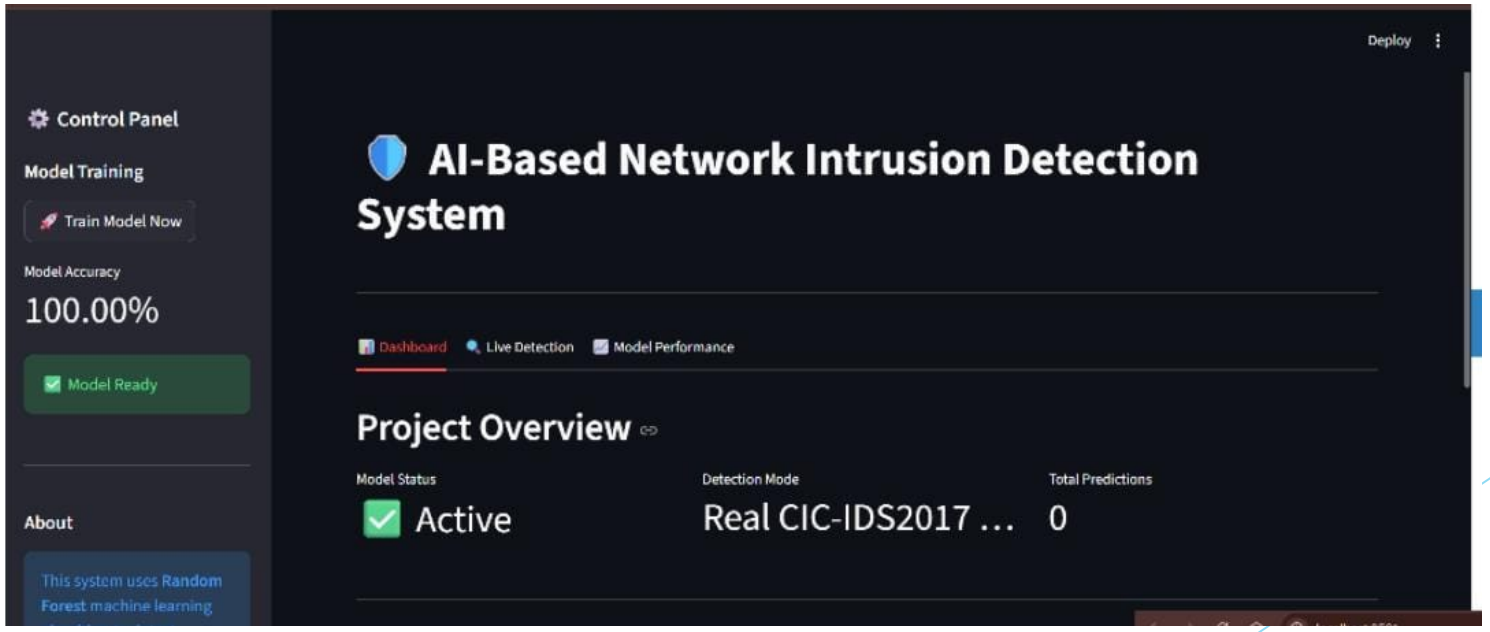
- Programming Language: Python
- Machine Learning Algorithm: Random Forest
- Libraries: Pandas, NumPy, Scikit-learn
- Dataset: NSL-KDD / KDD Cup 99
- Platform: Jupyter Notebook / Google Colab



RESULTS

Detection accuracy above 92%

- Fast intrusion detection
- Reduced false alarm rate
- Lightweight and efficient system



Demo Link

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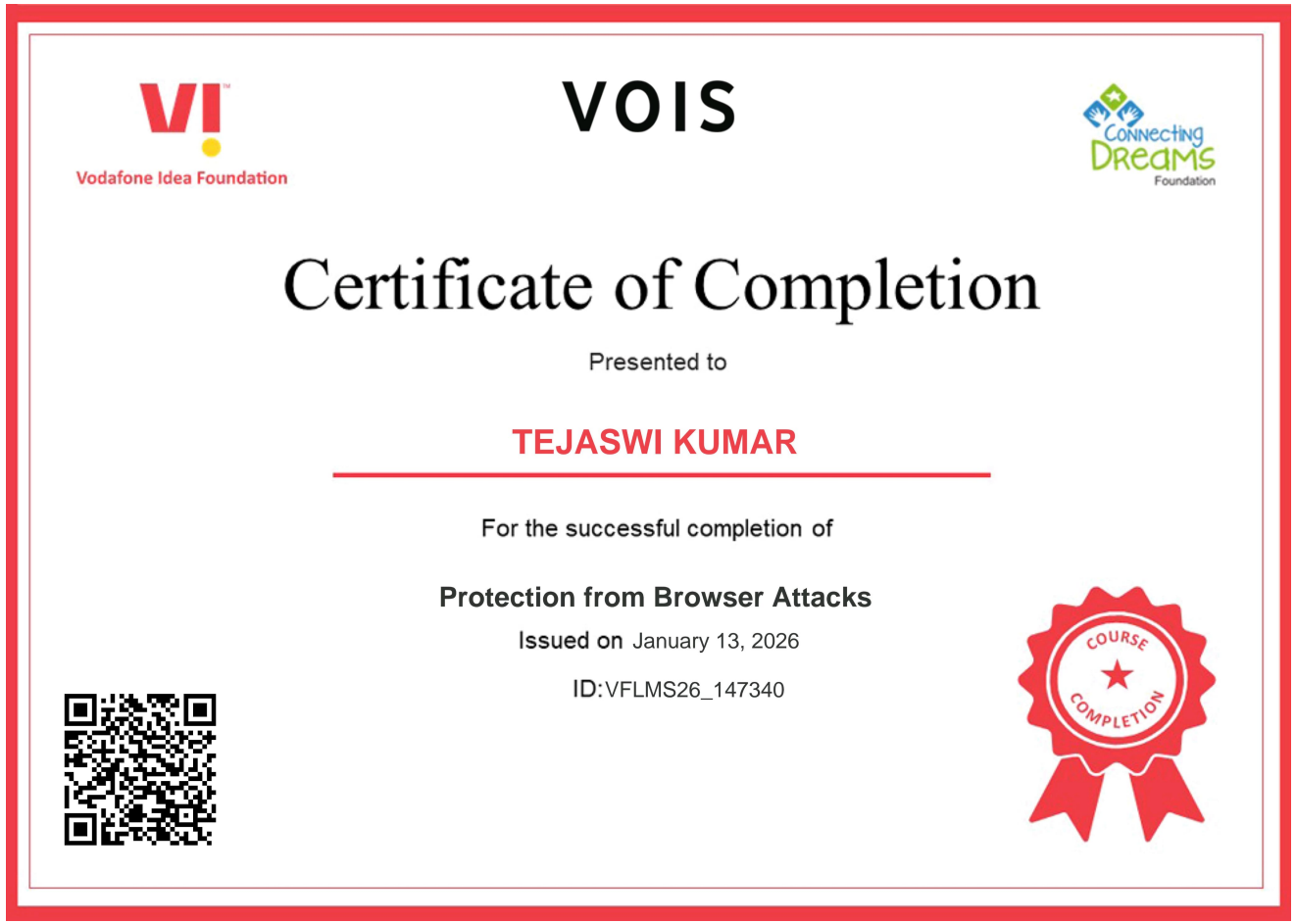
Certificate - Protection from browser attacks



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COURSE COMPLETION

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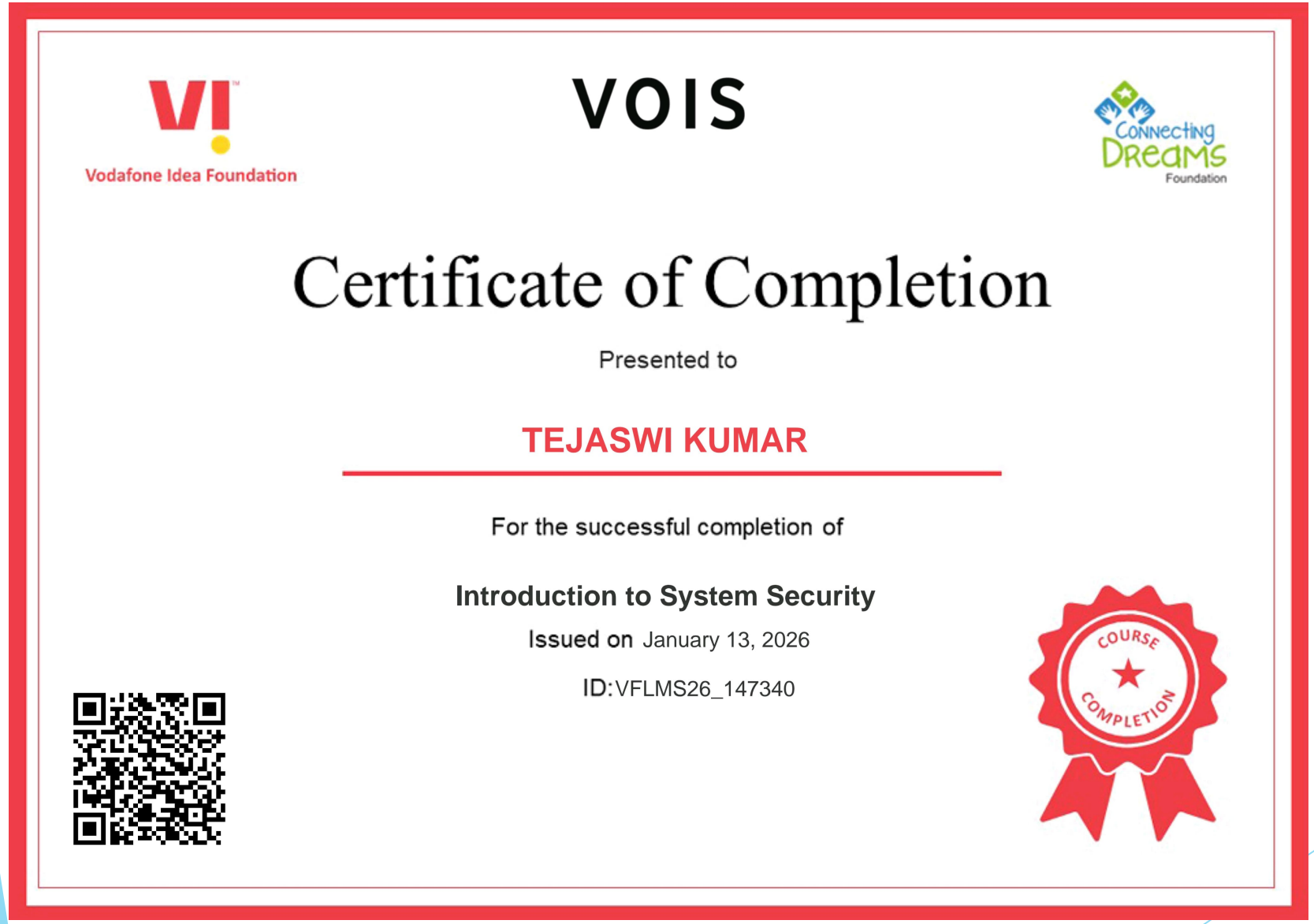

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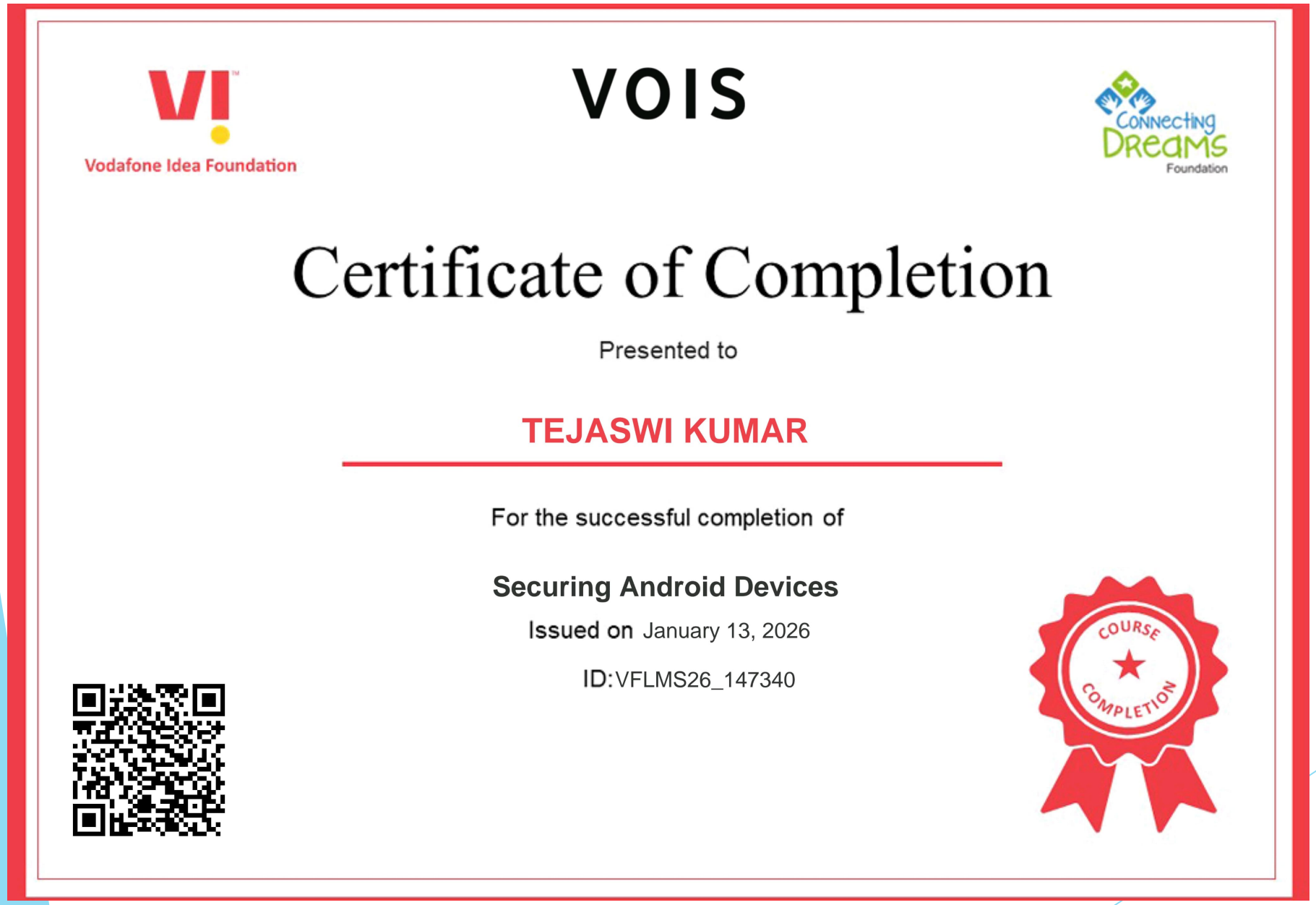
COURSE COMPLETION

Certificate - Securing Android Devices



GitHub link

Thank you