**Progress Report 1**

**AI – Powered threat detection for cloud networks**

Unit: COIT20265

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Date: 12/1/2025

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**Technical Artefacts & Links**

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| --- | --- |
| **Team Member** | **GitHub Links** |
| Jay Dilipbhai Yadav | <https://github.com/JAY8146/Group_1-Project/tree/main/Jay> |
| Harshkumar Dharmendrabhai Patel | <https://github.com/JAY8146/Group_1-Project/tree/main/Harsh> |
| Sonam Pelden | <https://github.com/JAY8146/Group_1-Project/tree/main/Sonam> |
| Walgama Ranasinghe Arachchilage | <https://github.com/JAY8146/Group_1-Project/tree/d402606762c603f9e08b458c6ab1e700293f427b/Akshitha> |

**Contribution Table**

**Web Application**

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| --- | --- | --- | --- |
| Team Member | Contribution (%) | Summary of Contributions | Key Artefacts |
| Jay Dilipbhai Yadav | 25% | - Dataset loading and cleaning. - Sampling for balanced datasets. - Flask-based model integration and deployment. | - Data loading scripts. - Cleaned datasets. - Random Forest model integration. |
| Harshkumar Dharmendrabhai Patel | 25% | - Performed EDA to derive insights. - Built train-test split pipeline. - Designed the Contact Page. | - EDA visualizations. - Train-test scripts. - Contact Page. |
| Sonam Pelden | 25% | - Developed text preprocessing pipeline. - Built and tuned ML models. - Implemented feature engineering using TF-IDF. | - Preprocessing functions. - ML model scripts. - Feature engineering workflow. |
| Walgama Ranasinghe Arachchilage | 25% | - Designed all frontend pages. - Conducted model evaluation and comparison. - Performed real-world testing. | - HTML/CSS files for pages. - Model evaluation results. - Usability and backend testing. |

**AWS configuration**

|  |  |  |
| --- | --- | --- |
| Name | Contribution (%) | Details |
| Sonam Pelden | 25% | Implemented AWS Backup settings for disaster recovery, including creating and managing backup plans. |
| Harsh Kumar Dharmendra Bhai Patel | 20% | Configured Elastic IP for maintaining consistent public IP access and integrated with VPC for secure networking. |
| Akshitas Isahan | 30% | Deployed Amazon S3 for scalable data storage, managed security policies, and configured IAM access rules. |
| Jay Dilipbhai Yadav | 25% | Deployed the application on AWS EC2 instances, configured VPC and Elastic IP, and optimized compute resources. |

**Next Steps**

As we progress towards completing the project, the following steps have been outlined to enhance functionality, ensure scalability, and finalize the project deliverables:

1. **Creation of a Real-Time Dashboard to Monitor Attack Logs**

We will give a real-time monitoring dashboard following app launch. The dashboard will show attack logs, vulnerabilities, user interactions, and system performance indicators. Real-time monitoring and logging with AWS CloudWatch will detect system errors and anomalies. With data visualisation capabilities, the dashboard will examine vulnerability detection trends.

1. **Final Report Preparation**

After dashboard integration and deployment, the team will write the final report. This report covers design, implementation, testing, and deployment. Problems, mitigation, and potential advancements will be discussed. Project documentation shall be academically and professionally compliant.

These steps will produce a robust, scalable, and easy-to-use web vulnerability detection solution.