

1.AI-Based Cyber Threat Detection System

- **Problem Statement:** Real-time identification of phishing, malware, and brute-force attacks.
- **Stage-I Work:** Literature survey, AI/ML algorithm selection, data collection from threat datasets, SRS, system design.
- **Skills:** Cybersecurity, ML (Random Forest/SVM), Python.
- **Tools:** Wireshark, Scikit-learn, TensorFlow.

GenAI in Cyber Threat Intelligence: Threats & Ops

Explores how generative AI (e.g., for polymorphic malware, sophisticated phishing frameworks, honeypots, training systems) shapes the cybersecurity landscape

[A survey of large language models for cyber threat detection - ScienceDirect](#)

2. Smart Helmet for Industrial Workers (IoT + AI)

- **Problem Statement:** Monitor worker safety parameters like gas leakage, temperature, and falls.
- **Stage-I Work:** Sensor integration study, model architecture, SRS, block diagrams.
- **Skills:** Embedded systems, IoT, ML.
- **Tools:** Arduino/Raspberry Pi, Firebase, Python.

3.AI-Powered Traffic Signal Automation System

- **Problem Statement:** Manage traffic congestion by detecting traffic density via camera feed.
- **Stage-I Work:** YOLO model research, literature review on traffic systems, SRS, model design.
- **Skills:** Computer Vision, Deep Learning.
- **Tools:** YOLOv8, OpenCV, Python, Raspberry Pi.