SMART INDIA HACKATHON 2025

TITLE PAGE

- **Problem Statement ID – SIH25127**
- **Problem Statement Title- Anveshak**
- **Theme- Blockchain and Cybersecurity**
- **PS Category- Software**
- **Team ID-**
- **Team Name :- BruteForce Coders**

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Anveshak – “The Detector/Explorer”

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- Our Solution is a real-time cybersecurity threat detection platform designed to safeguard critical infrastructure such as nuclear power plants. It integrates advanced AI anomaly detection with a user-friendly monitoring dashboard.
- **Proposed Solution:**

1. Real –Time Threat Detection Platform

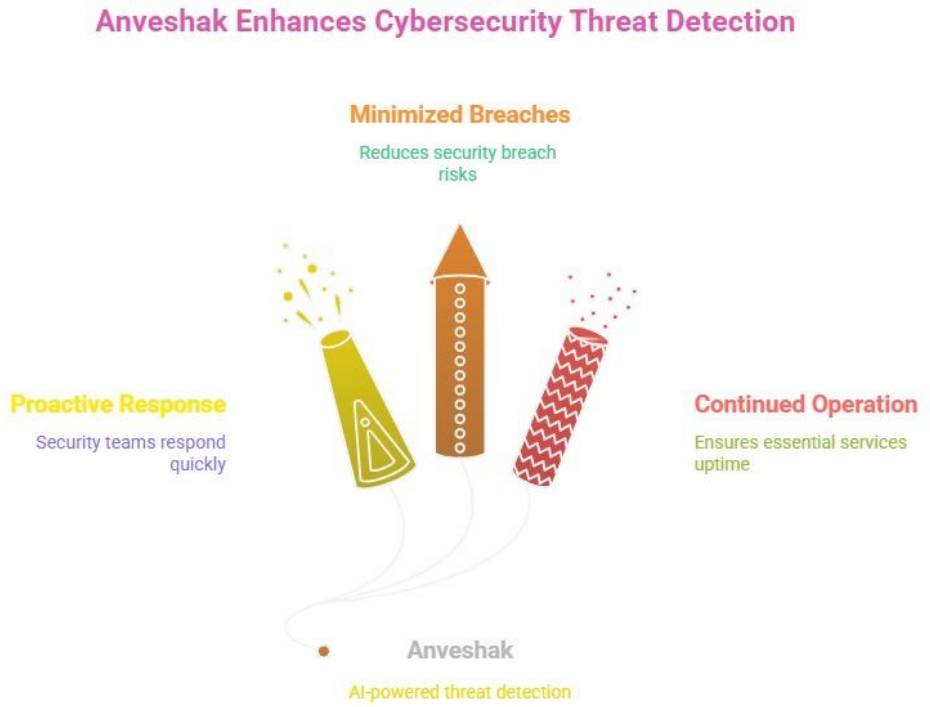
- Collects logs from servers, networks, and user activity.
- Monitors for warning signs like multiple failed logins or unusual data transfers.

2. Advanced Anomaly Detection System

- Identifies deviation from normal, expected behavior.
- Flags suspicious activities that could indicate a security breach.

3. User-Friendly Monitoring Dashboard

- Translates complex security information simple, actionable alerts.
- Uses a traffic light system (green, yellow, red) to indicate threat severity.
- **Why It Stands Out :**
- It tackles a real-world security issue with global impact.
- Easy to understand with usual alerts instead of complex data.
- It is designed in a way that can be scaled to protect not just nuclear plants ,but any critical infrastructure.



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TECHNICAL APPROACH

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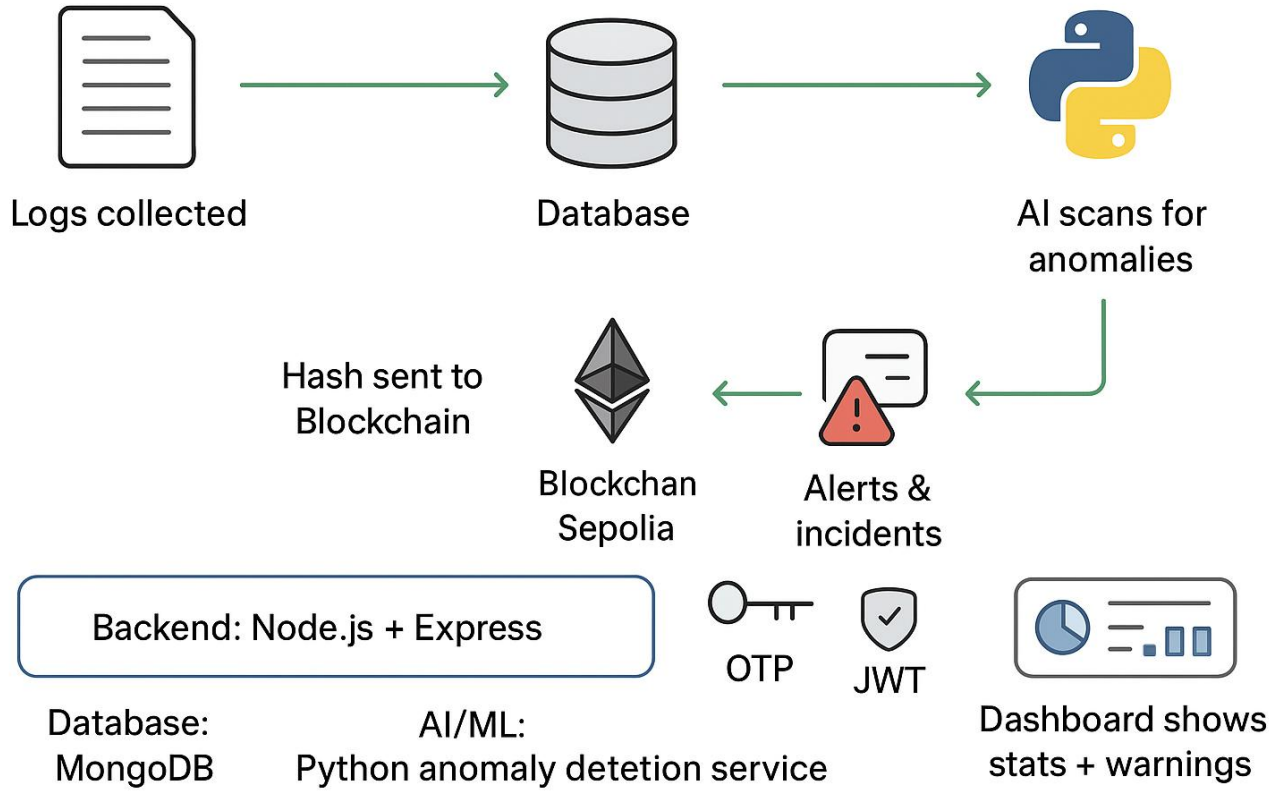
- **Technologies used:**
- **Backend:** Node.js + Express
- **Database:** MongoDB
- **Blockchain:** Ethereum Sepolia -> proof of integrity
- **AI/ML:** Python anomaly detection service
- **Security:** OTP + JWT authentication

- **Process Flow:**
- 1. Logs collected -> Database
- 2. Hash sent to Blockchain (proof)
- 3. AI scans for anomalies
- 4. Alerts & incidents created
- 5. Dashboard shows stats + warnings



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FEASIBILITY AND VIABILITY

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Feasibility:

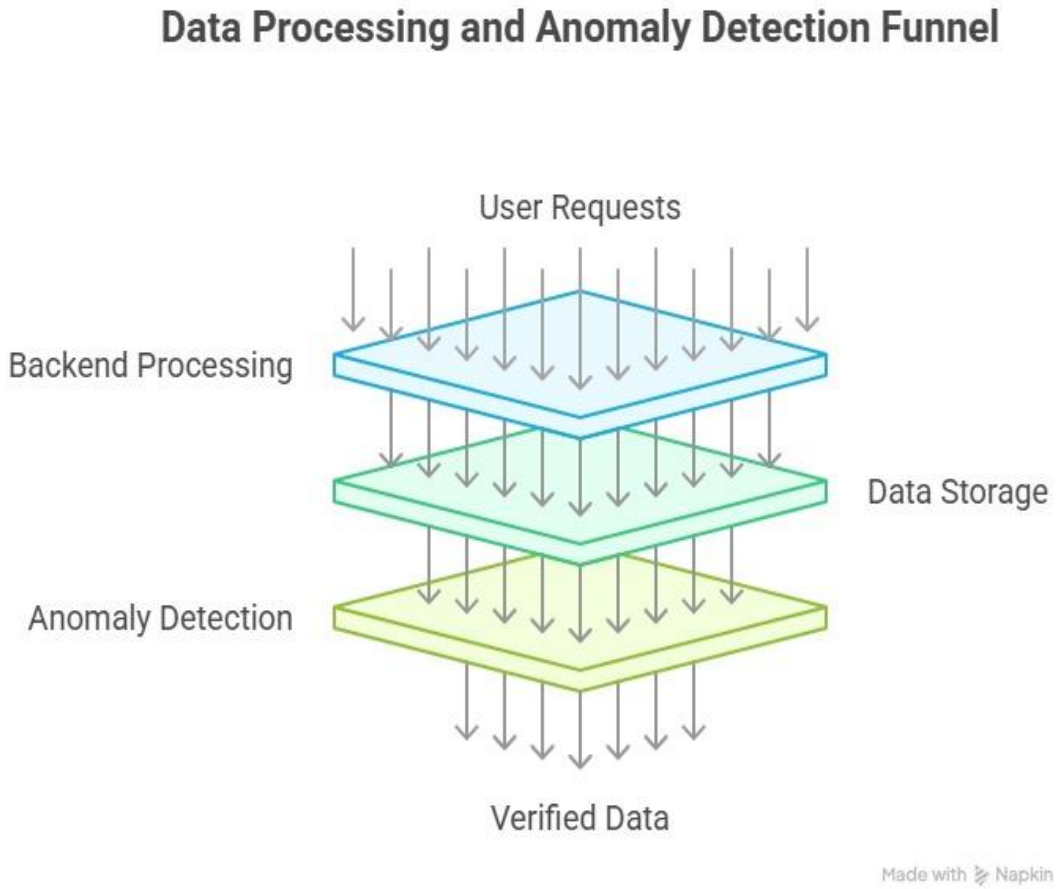
- Uses open-source tech(low cost).
- Real-time and scalable.
- Can be adapted beyond nuclear ->finance,
- govt, healthcare.

Challenges:

- Training AI to avoid false alarms.
- Blockchain speed/cost issues.

Solutions:

- Hybrid: rules + AI model.
- Use Private/test for fast and cheap validation.



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IMPACT AND BENEFITS

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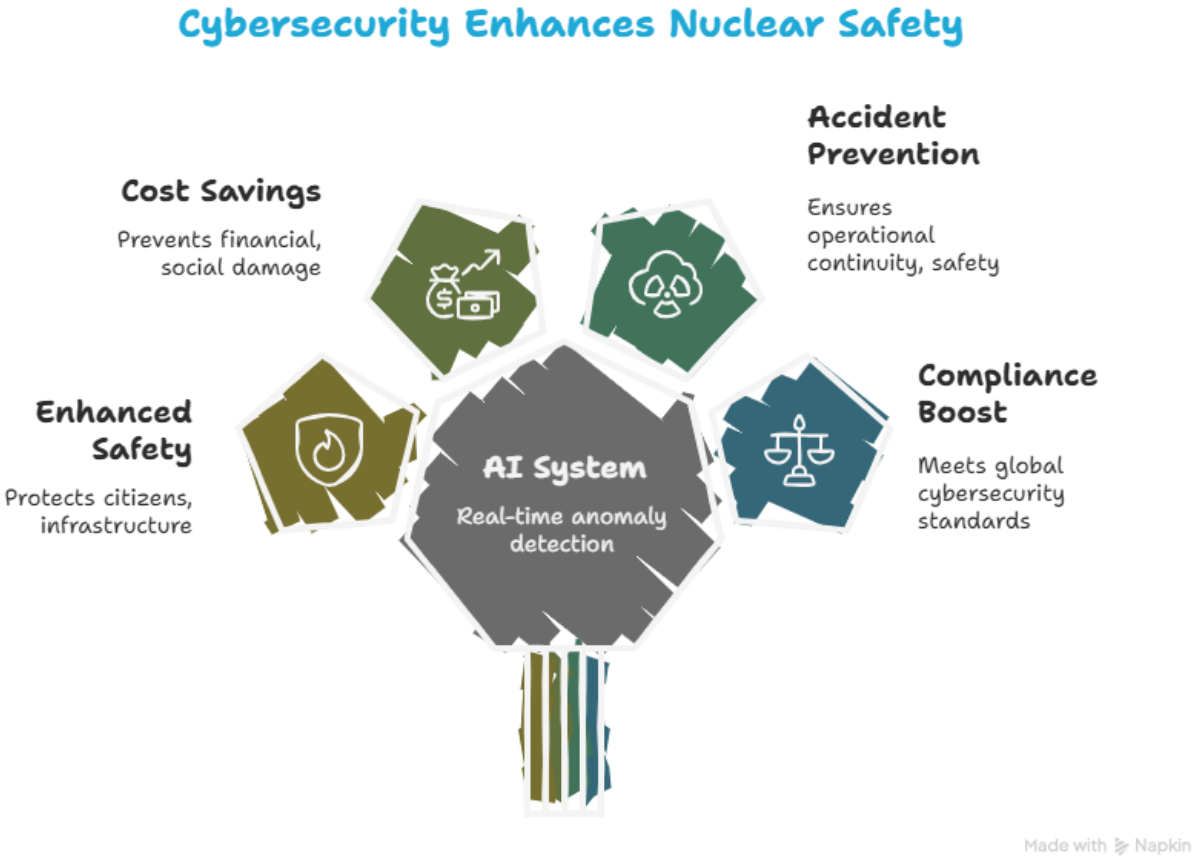
Impact:

- Protects nuclear facilities from cyberattacks.
- Builds trust with tamper-proof records.
- Detects threats before big damage happens.

Benefits:

- Safer citizens & infrastructure.
- Saves crores by preventing cyber disasters.
- Avoid accidents from hacked nuclear plants.



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RESEARCH AND REFERENCES

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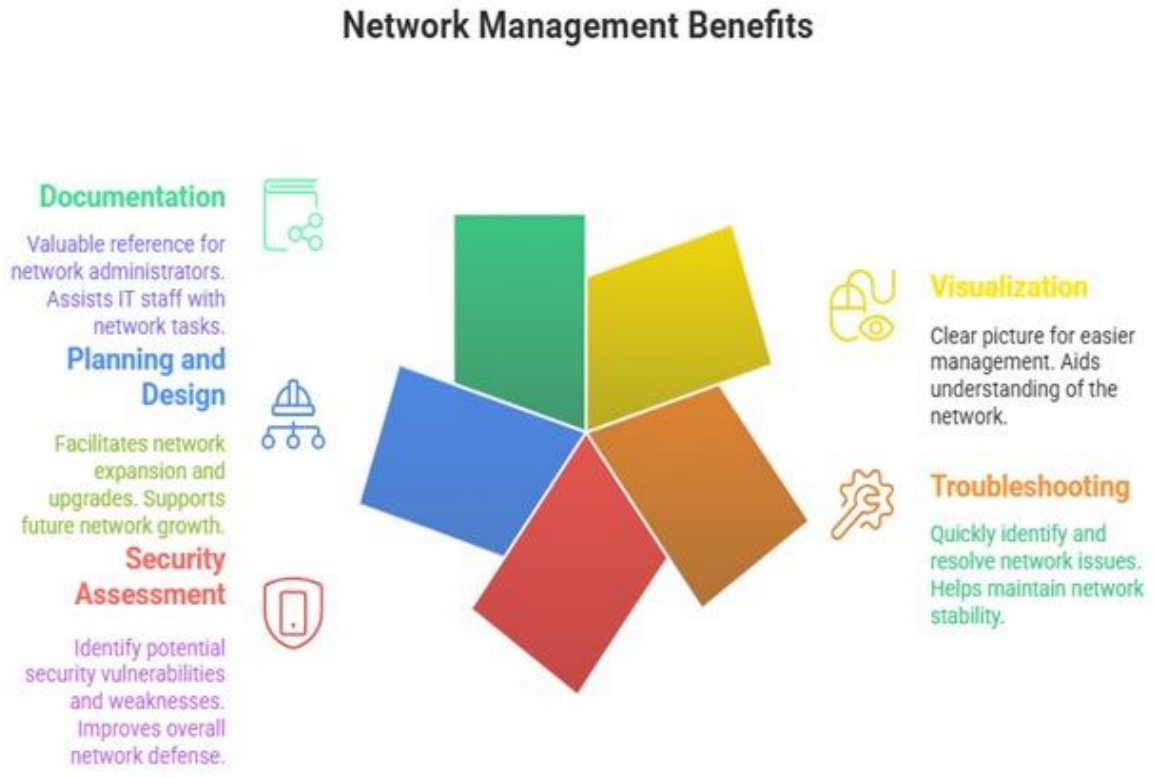
- **ScienceDirect Article:** https://www.sciencedirect.com/science/article/pii/S0149197023001737?utm_source=chatgpt.com
  - A scientific research paper, likely detailing advancements in areas such as cybersecurity, industrial control systems, or anomaly detection.
- **MDPI Journal Article:** https://www.mdpi.com/2079-9292/13/22/4428
  - A peer-reviewed article from an MDPI journal, potentially discussing sensor technologies, data processing, or intelligent systems relevant to monitoring and security.
- **PubMed Central Article 1:** https://pmc.ncbi.nlm.nih.gov/articles/PMC12299818/
  - A biomedical research publication from PubMed Central, which may explore analytical methods or AI applications in data-rich environments, even if not directly cybersecurity-focused.
- **PubMed Central Article 2:** https://pmc.ncbi.nlm.nih.gov/articles/PMC11086118/
  - Another biomedical research publication from PubMed Central, offering insights into complex data analysis, pattern recognition, or diagnostic systems that could have analogous applications.
- **Springer Book Chapter:** https://link.springer.com/chapter/10.1007/978-0-387-88523-0_4

  A specific chapter from an academic book published by Springer, likely delving into a specialized topic in computer science, information security, or advanced algorithms.



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Please ensure below pointers are met while submitting the Idea PPT:

1. **Kindly keep the maximum slides limit up to six (6). (Including the title slide)**
2. **Try to avoid paragraphs and post your idea in points /diagrams / Infographics /pictures**
3. **Keep your explanation precise and easy to understand**
4. **Idea should be unique and novel.**
5. **You can only use provided template for making the PPT without changing the idea details pointers (mentioned in previous slides).**
6. **You need to save the file in PDF and upload the same on portal. No PPT, Word Doc or any other format will be supported.**

Note - You can delete this slide (Important Pointers) when you upload the details of your idea on SIH portal.