PROJECT
PROPOSAL

SHIELD VISION:

AI based early Rape and harrassment detection system.

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PROBLEM STATEMENT :

- **35%+** of women globally face violence;
- **80%+** of cases go unreported.
- Existing tools like panic buttons are reactive, not preventive.
- Delayed response times and lack of real-time detection lead to increased harm and underreporting

SOLUTION : SHIELD VISION

- Shield Vision offers:
- AI Vision & Audio Detection: Identifies threats in real time via CCTV and sound analysis.
- Instant Alerts: Sends SMS notifications to emergency contacts or authorities.
- Privacy-First Design: Encrypted edge processing and blockchain logs.
- Chatbot Support: AI assistance during crises.
- Wearable & App Options: Portable safety for women on the move.
- Shield Vision shifts safety from reaction to prevention—powered by AI, secured by design.

PROJECT OVERVIEW:
SHIELD VISION — **"SAFE , SEEN, SUPPORTED- SHIELD VISION PROTECTING YOU"**

- ## Objective :

  To create an AI-powered real-time women's safety system that proactively detects threats and enables instant response.

- ## Key Features:

  Real-time threat detection using AI vision and audio.
  Instant alerts to emergency contacts or authorities.
  Privacy-first design with encrypted data processing.
  UI-friendly dashboard for managing feeds, alerts, and settings.
  Live feed violence detection via AppNet-powered computer vision.
  Voice-based crime detection using Whisper AI.
  Emergency messaging through Twilio/Textbelt API.
  Chatbot support with Langchain and LLMs.
  Smart login & blockchain logs via Hyperledger for secure access and tamper-proof records.

- ## Architecture Components:

  Architecture Components:
  Edge processing with MobileNet+LSTM and Whisper for low-latency detection.
  Flask backend for data flow and user authentication.
  Twilio for alert notifications.
  SQLite for data storage.
  Hyperledger for incident logging.

- ## Vision:

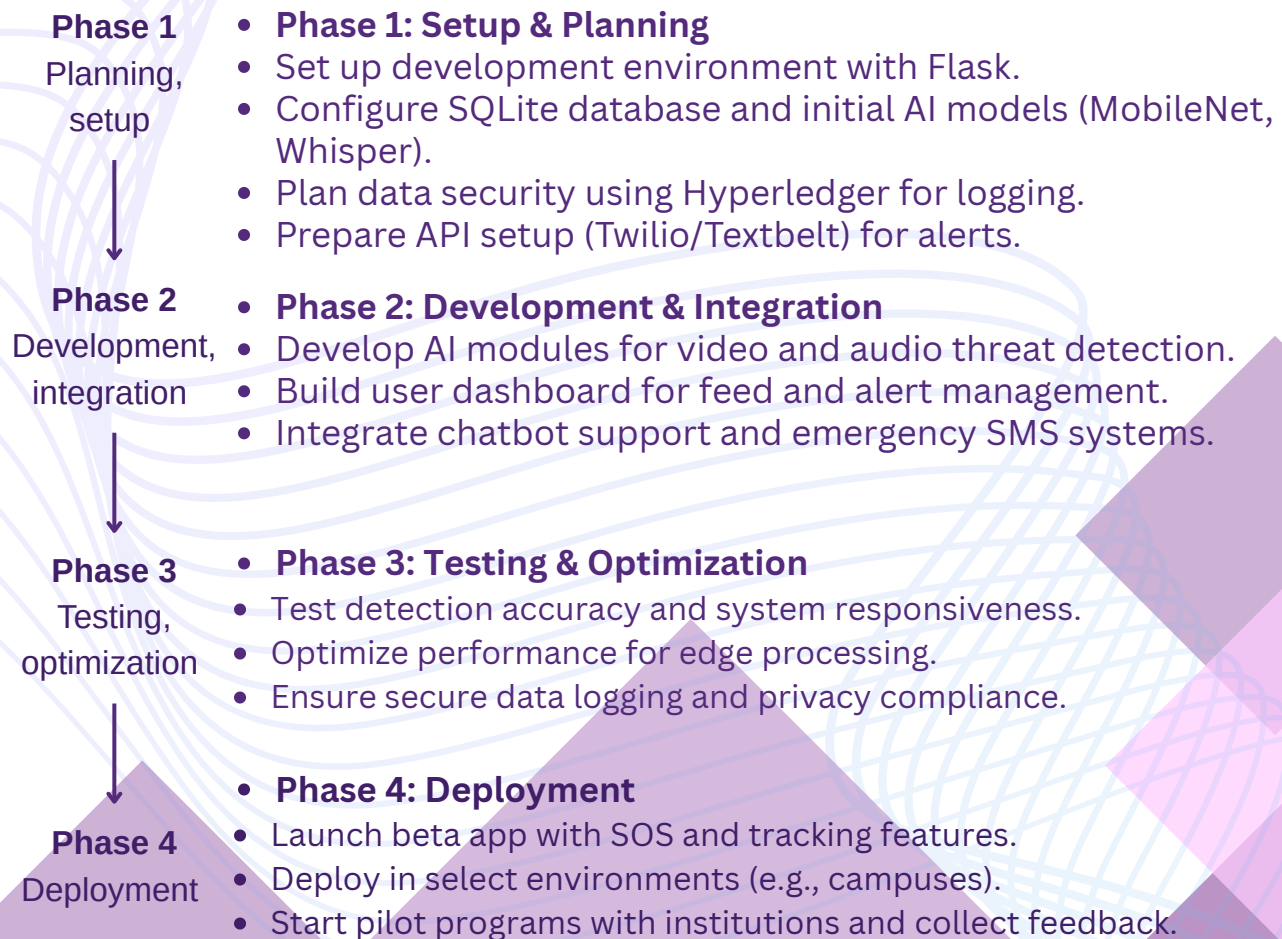 Support UN SDG #5 (Gender Equality) by leveraging AI to prevent violence and foster inclusive safety

PROJECT OBJECTIVES:

- Enable real-time threat detection using AI-powered vision and audio analysis to identify harassment or assault instantly.
- Provide instant alerts to emergency contacts or authorities to reduce response time during crises.
- Ensure user privacy and data security through encrypted processing and tamper-proof logging with blockchain.
- Offer a user-friendly interface for easy access to live feeds, alerts, and system settings.
- Support women's empowerment and safety in various environments such as campuses, public transport, and urban areas.
- Contribute to UN Sustainable Development Goal #5 by leveraging technology to promote gender equality and prevent violence.

IMPLEMENTATION PLAN:

Phase 1
Planning, setup

- **Phase 1: Setup & Planning**
- Set up development environment with Flask.
- Configure SQLite database and initial AI models (MobileNet, Whisper).
- Plan data security using Hyperledger for logging.
- Prepare API setup (Twilio/Textbelt) for alerts.

Phase 2
Development, integration

- **Phase 2: Development & Integration**
- Develop AI modules for video and audio threat detection.
- Build user dashboard for feed and alert management.
- Integrate chatbot support and emergency SMS systems.

Phase 3
Testing, optimization

- **Phase 3: Testing & Optimization**
- Test detection accuracy and system responsiveness.
- Optimize performance for edge processing.
- Ensure secure data logging and privacy compliance.

Phase 4
Deployment

- **Phase 4: Deployment**
- Launch beta app with SOS and tracking features.
- Deploy in select environments (e.g., campuses).
- Start pilot programs with institutions and collect feedback.

TECH STACK

AI & Machine Learning:
- MobileNet + LSTM – Real-time video-based threat detection.
- Whisper AI – Audio-based detection of distress or suspicious sounds.
- AppNet – Computer vision for harassment detection.

Backend:
- Flask – Handles data flow, authentication, and alert coordination.

Database:
- SQLite – Stores user information and camera feed data.

Blockchain:
- Hyperledger – Provides tamper-proof logging of incidents.

APIs & Messaging:
- Twilio / Textbelt – For sending instant emergency SMS alerts.

NLP & Chatbot Support:
- Langchain + LLMs – Provides context-aware guidance during emergencies.

Security:
- Smart Login System – Ensures secure user authentication.
- This stack ensures real-time performance, privacy, scalability, and user accessibility.

OUTCOMES:

- Faster Response: Real-time AI alerts help reduce harm by enabling quicker intervention.
- Crime Deterrence: Smart surveillance discourages potential offenders.
- Empowerment: Women feel more confident and secure in public and private spaces.
- Data-Driven Policing: Anonymized data helps identify high-risk areas and informs safety strategies.

IMPLEMENTATION AREAS:

EDUCATIONAL INSTITUTIONS
- Colleges & Universities: Campuses, hostels, libraries, and parking lots.
- Schools: Corridors, playgrounds, and school buses.

PUBLIC SPACES
- Parks & Malls: High foot-traffic areas with existing CCTV infrastructure.
- Streets & Alleys: Particularly in urban safety hotspots.
- Public Toilets: Where hidden surveillance (audio only) can detect distress.

TRANSPORTATION
- Buses, Trains, and Subways: Interior monitoring for passenger safety.
- Ride-Sharing & Taxis: Mobile device-based detection and alerting.

WORKPLACES
- Corporate Offices & Tech Parks: Building entrances, corridors, parking zones.
- Factories & Industrial Areas: For night-shift and isolated environments.

SMART CITIES
- Urban Surveillance Networks: Integration into citywide CCTV systems.
- Police Monitoring Centers: For real-time alerts and data insights.

RESIDENTIAL & PERSONAL USE
- Gated Communities & Apartments: Especially common areas and elevators.
- Wearables for Individuals: Jewelry or mobile app with built-in AI alerting.

FUTURE SCOPE:

SHORT-TERM (6–12 MONTHS):
- Add gesture and fall detection to enhance threat sensing capabilities.
- Launch beta mobile app with SOS button and real-time tracking.

MID-TERM (1–2 YEARS):
- Develop smart jewelry (bracelets, pendants) with built-in panic triggers.
- Fully implement Hyperledger for secure, tamper-proof incident logging.

LONG-TERM (3–5 YEARS):
- Global expansion with multilingual AI models for wider adoption.
- Partne djr with international safety organizations to increase impact.
- Enable continuous AI learning from real-world data to improve detection accuracy and adaptability.

BUSINESS AREAS

B2G (BUSINESS-TO-GOVERNMENT):
- CONTRACTS WITH MUNICIPALITIES FOR CITY-WIDE SHIELD VISION SURVEILLANCE NETWORKS.

B2B (BUSINESS-TO-BUSINESS):
- ANNUAL SUBSCRIPTION PACKAGES FOR UNIVERSITIES, CORPORATIONS, AND TRANSIT AUTHORITIES.

B2C (BUSINESS-TO-CONSUMER):
- FREEMIUM MOBILE APP: BASIC SOS FEATURES AVAILABLE FOR FREE.
- PREMIUM SUBSCRIPTION: INCLUDES FEATURES LIKE LIVE TRACKING AND SAFETY ANALYTICS.

OEM LICENSING:
- LICENSING SHIELD VISION AI FOR INTEGRATION INTO THIRD-PARTY SECURITY CAMERAS AND IOT DEVICES.