Team Details

a. **Team name: AgentCore**
b. **Team leader name: Koyya Suchitra**
c. **Problem statement:** Large-scale public events like music festivals, religious gatherings, and political rallies are prone to crowd-related risks such as stampedes, medical delays, panic behavior, and lost individuals. Existing monitoring methods are either manual or reactive, leading to delayed responses, miscommunication, or even fatal outcomes. There's a need for a proactive, intelligent system that can detect, predict, and act on safety thr eats in real-time. This submission addresses the **Project Drishti** challenge under Google's Agentic AI initiative.

Brief about the idea:

As part of **Project Drishti**, we propose **"NeuroNet: An Agentic AI Safety System"** — a next-gen situational awareness platform designed to act as the digital nervous system for large-scale public event safety. NeuroNet consists of several intelligent agents built using Google Cloud tools that collaboratively monitor, analyze, predict, and act on real-time crowd data. It includes predictive bottleneck analysis, natural language situation summaries using Gemini, autonomous emergency dispatch, anomaly detection (panic, fire, stampede), and an AI-based Lost & Found.

Opportunities:

- India alone witnesses 500+ large public gatherings per year, where crowd mismanagement leads to accidents.
- Government authorities and event organizers seek intelligent safety systems post-pandemic.
- NeuroNet can be scaled to sports events, religious yatras, music fests, and political campaigns.
- Can be extended to smart cities and disaster response scenarios.

How different is it from any of the other existing ideas?

- Most solutions offer only dashboards or CCTV monitoring.
- NeuroNet uses agentic behavior: multiple autonomous AI agents that adapt, learn, and take actions collaboratively.
- Incorporates proactive **prediction (not just detection)** using Vertex AI Forecasting.
- Includes real-time multimodal awareness using Gemini Vision + Text + Audio models.
- Crowd sentiment and panic detection via ambient sound + movement + social signals.
- AI chatbot for attendees, with real-time help, directions, or panic reporting.

How will it be able to solve the problem?

- **Predicts** stampede zones 15-20 mins in advance and suggests preventive actions.
- **Summarizes** ongoing security issues in natural language for quick commander decisions using Gemini.
- **Automatically dispatches** the nearest response team using GPS + congestion-aware Maps route.
- **Detects anomalies** (fire, smoke, panic) in video/audio feeds and issues high-priority alerts.
- **Finds lost persons** by scanning live video feeds using photo or facial recognition.\
- **Shifts event management from reactive to proactive** by forecasting risks, automating responses, and summarizing threats before escalation.

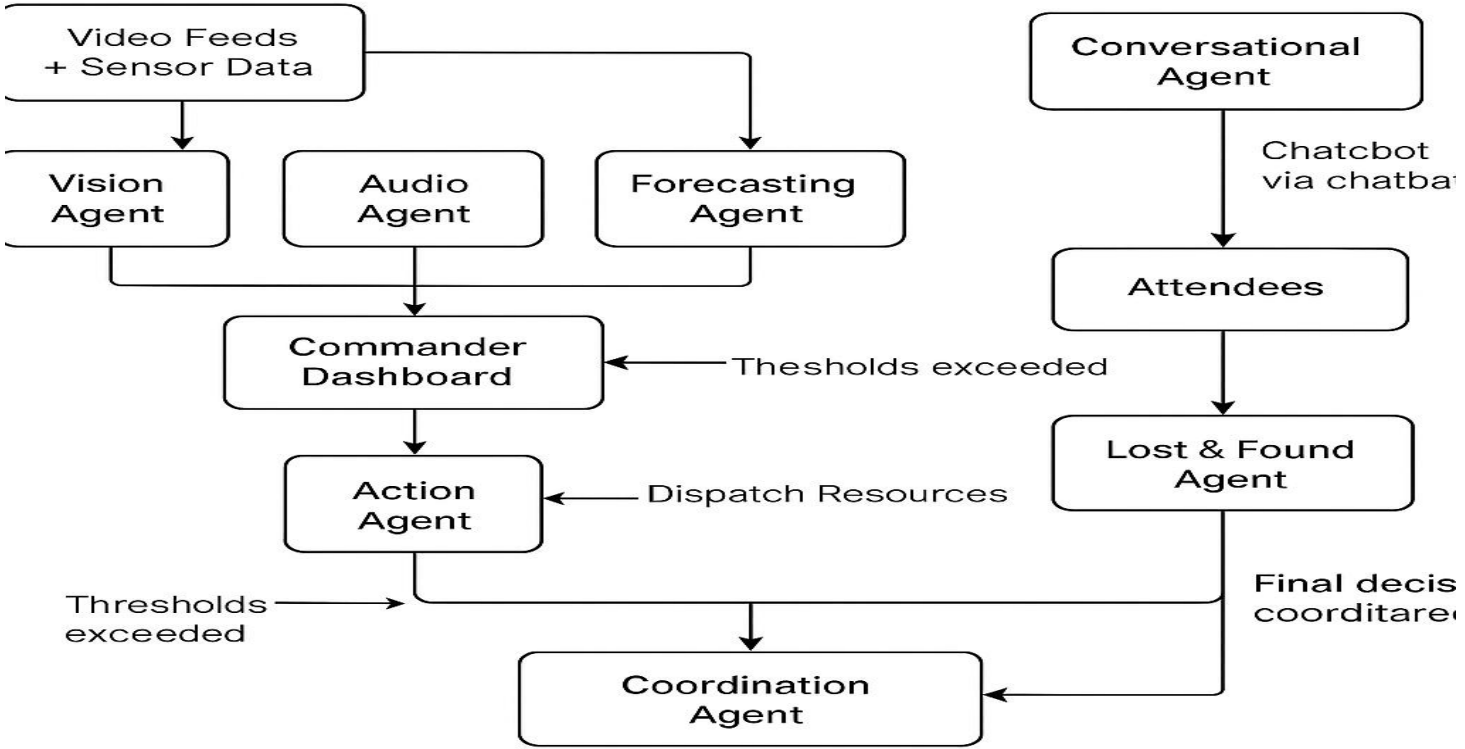
USP of the proposed solution

- First-of-its-kind **fully agentic, decentralized AI safety system** for crowd environments.
- Built on **Vertex AI Agent Builder** for seamless orchestration of multiple intelligent agents.
- Combines **vision, sound, text, prediction, and routing** in one cohesive system.
- Offers **contextual situational summaries** using Gemini for human decision-makers.
- Capable of **autonomous actions** (closing gates, sending alerts, triggering drones).

List of features offered by the solution

1. Predictive Crowd Flow Analysis
2. AI-Powered Situational Summaries for Commanders
3. Smart Emergency Dispatch & Navigation
4. Multimodal Anomaly Detection (Fire, Smoke, Panic)
5. Lost & Found AI (Facial Matching + Feed Scanning)
6. Crowd Sentiment & Agitation Detector
7. Real-time LED Screen Alerts
8. AI Chatbot for Attendees (SOS, Directions, Reporting)
9. Self-Learning Agent for Different Event Types
10. Autonomous Drone Deployment on Trigger Events

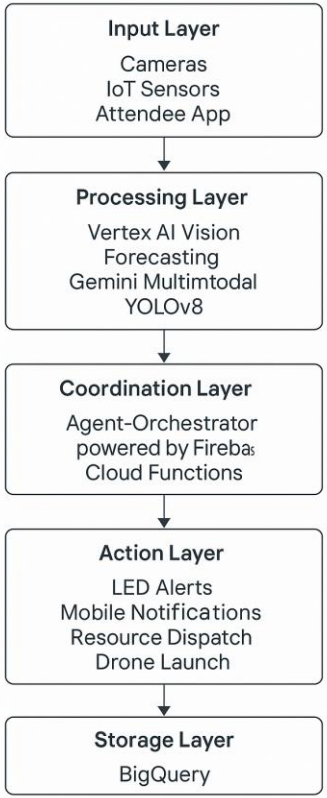
Process flow diagram or use-case diagram



Technologies to be used in the solution

- **Frontend:** Flutter for mobile app (attendees, organizers)
- **Backend:** FastAPI (Python), Firebase Realtime DB & Firestore
- **AI/ML:**
  - Vertex AI Vision for feed analysis
  - Vertex AI Forecasting for crowd movement prediction
  - Gemini Pro/Gemini Multimodal for summarization and facial recognition
  - YOLOv8 + OpenCV for object/person detection
  - MediaPipe for posture-based panic detection
- **Cloud:** Google Cloud Functions, Pub/Sub, BigQuery, Firebase Auth
- **Others:** Google Maps API for navigation, Dialogflow for conversational agent, Firebase Studio for dashboard prototyping

Architecture diagram of the proposed solution



Wireframes/Mock diagrams of the proposed solution (optional)

- Commander Dashboard with live alerts + heatmaps
- Mobile App: SOS button, Lost & Found upload, Chat with AI
- Predictive heatmap overlay
- Resource dispatch routing map

Google Cloud

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Thank you!