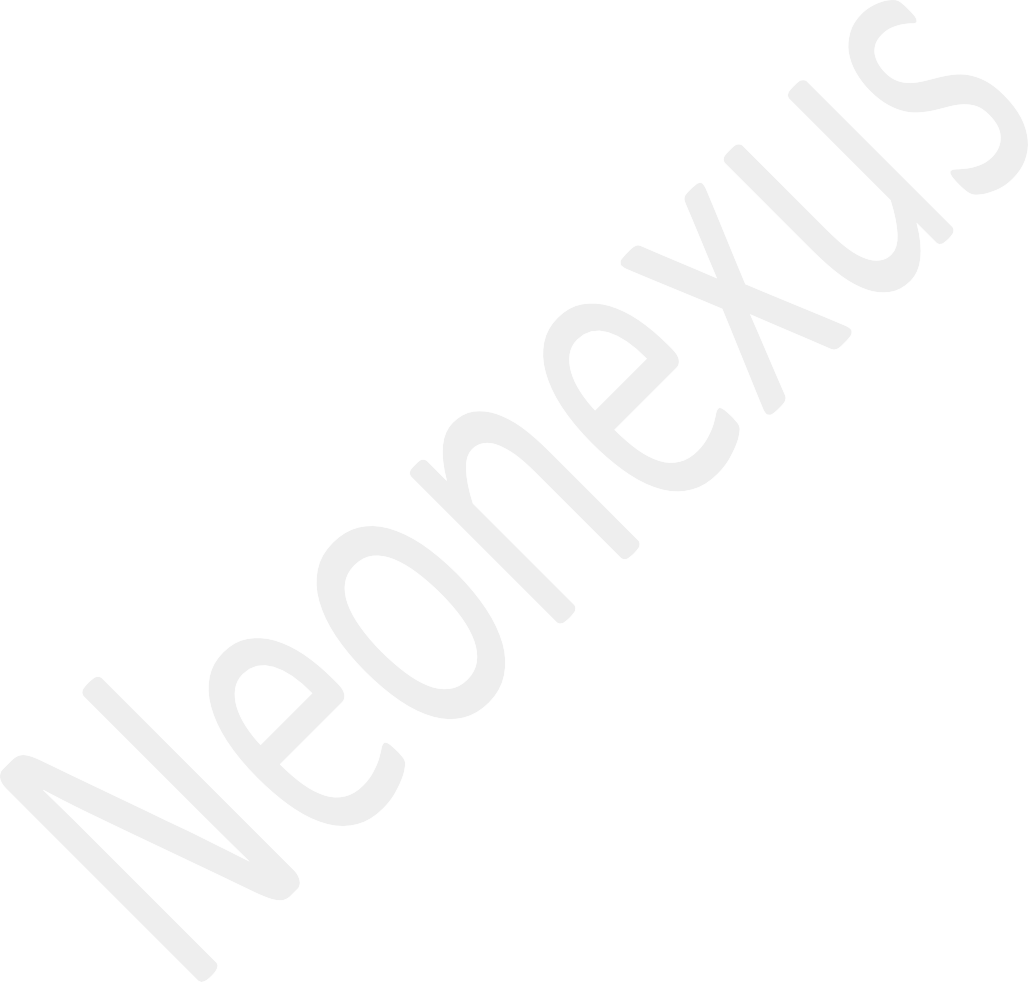
 

NeoNexus 36.0 Hackathon Abstract :

**Team Details:**

* **Team Name:** Strivers
* **Team Leader:** Y PRATHAP REDDY
* **Team Members (Name + USN):** Y Prathap Reddy (3BR22CA061)

Praveen Kumar Naik (3BR22CS124)

Rohan Hiremath (3BR22CS140)

Sugali Rahul Naik (3BR22EE083)

* **College Name:** Ballari Institute of Technology and Management
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**Problem Statement:**

**AI Dashcam Analytics for Risk Detection**

Real-time video processing alerts drivers about dangerous maneuvers or road behavior, while also helping in insurance cases.

**Problem Overview :**

India ranks among the highest globally in road accident fatalities, with risky driving behaviors being a key contributor. Dashcams are increasingly common, yet most only record footage without providing intelligent insights. There is a critical need for an AI-driven system that can **detect and alert in real-time** about dangerous driving patterns like rash lane changes, sudden braking, tailgating, and pedestrian hazards. This can not only prevent accidents but also support post-incident analysis and insurance claims.

**Proposed Solution :**

We propose an **AI-powered dashcam system** that processes live or recorded video and:

* **Detects risky behaviours** like sharp lane cuts, tailgating, speeding, and pedestrian proximity using object detection and tracking.
* **Flags road hazards** such as potholes, stopped vehicles, or jaywalking.
* **Generates real-time alerts** to drivers via a mobile app.
* **Logs all events to a cloud dashboard** for future review, insights, and insurance usage.

The user can install the app in any smartphone mounted as a dashcam. The app captures video analyzes it locally or via the cloud, and shows alerts or stores incidents in a backend system.

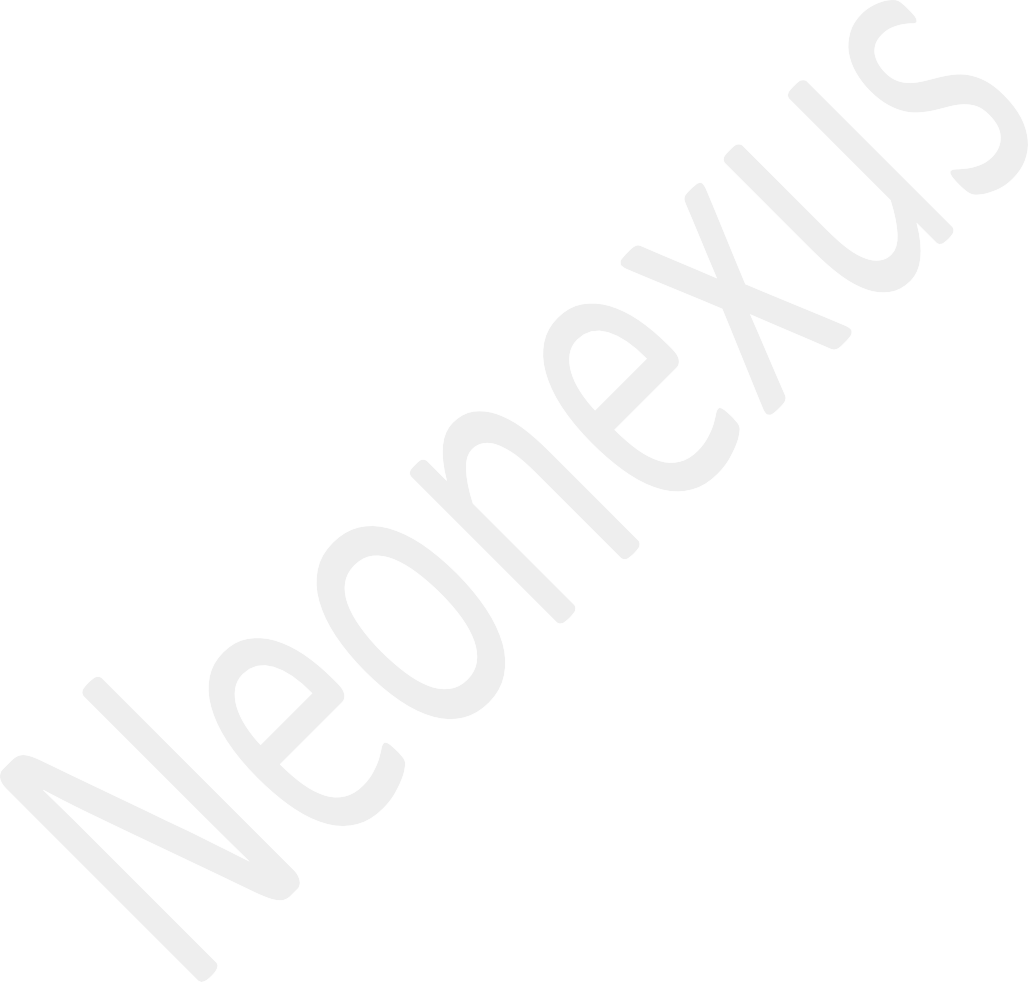
**Innovation & Uniqueness :**

* Real**-time feedback**, not just passive recording like traditional dashcams.
* Edge **deployment possible** (Jetson Nano or smartphone) — ideal for low-latency processing.
* Uses **AI tracking + behavioral heuristics**, not just basic object detection.
* Scalable **dashboard** enables fleet monitoring for logistics or insurance use.
* Future-ready: can integrate **driver emotion detection**, **vocal warnings**, and **insurance APIs** for driving score analysis.

**Tech Stack / Tools:**

List major technologies, languages, frameworks, APIs, or hardware we'll use.

* **Frontend:** React.js, Tailwind CSS
* **Backend:** Python + Fast API
* **ML/AI:** YOLOv8, DeepSort, OpenCV, PyTorch
* **Database:** MongoDB / Firebase
* **Deployment:** Docker, Render / AWS
* **Optional Mobile App:** React Native or Flutter

**Expected Outcome :**

By the end of the hackathon, we aim to build a **working MVP** that:

* Accepts dashcam video (live or file-based)
* Runs object detection + tracking
* Flags at least 3 types of risky behavior
* Generates event logs with video snippets
* Displays results on a dashboard