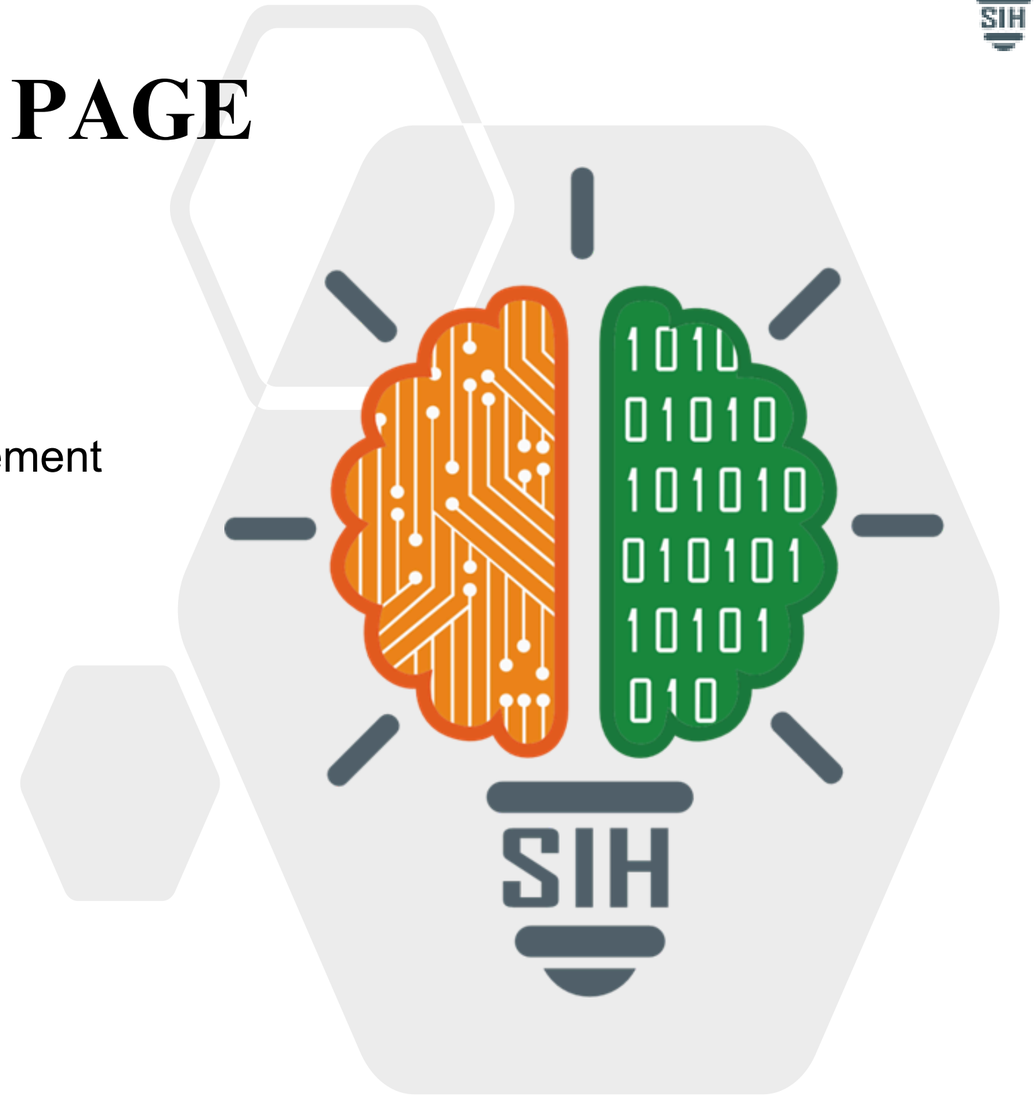
# SMART INDIA HACKATHON 2025

## TITLE PAGE

- **Problem Statement ID-** 25050
- **Problem Statement Title-** Smart Traffic Management System for Urban Congestion.
- **Theme-** Transportation & Logistics
- **PS Category-** Software
- **Team ID-** DES-SIH-17
- **Team Name-** Civaura



# IDEA TITLE



## • Proposed Solution

### ~PRAVAH~

**Prioritized Response & Adaptive Vehicular Actuation Hub**

**AI Traffic Lights**
Adaptive traffic lights using existing CCTV.

**Backup Sensors**
Radar/inductive loops for fog/rain conditions.

**Countdown Timers**
Timers to save fuel and reduce pollution.

**Emergency Detection**
Auto-detection of emergency vehicles (siren).

**Event Modes**
Pre-trained signal modes for seasonal events.

**Central Dashboard**
AI prediction for congestion trends on dashboard & control unit for authorities.

### UNIQUENESS

**Alerts** — Instant accident detection for quick response.

**Multimodal** — CCTV and radar/loop sensors for all-weather conditions.

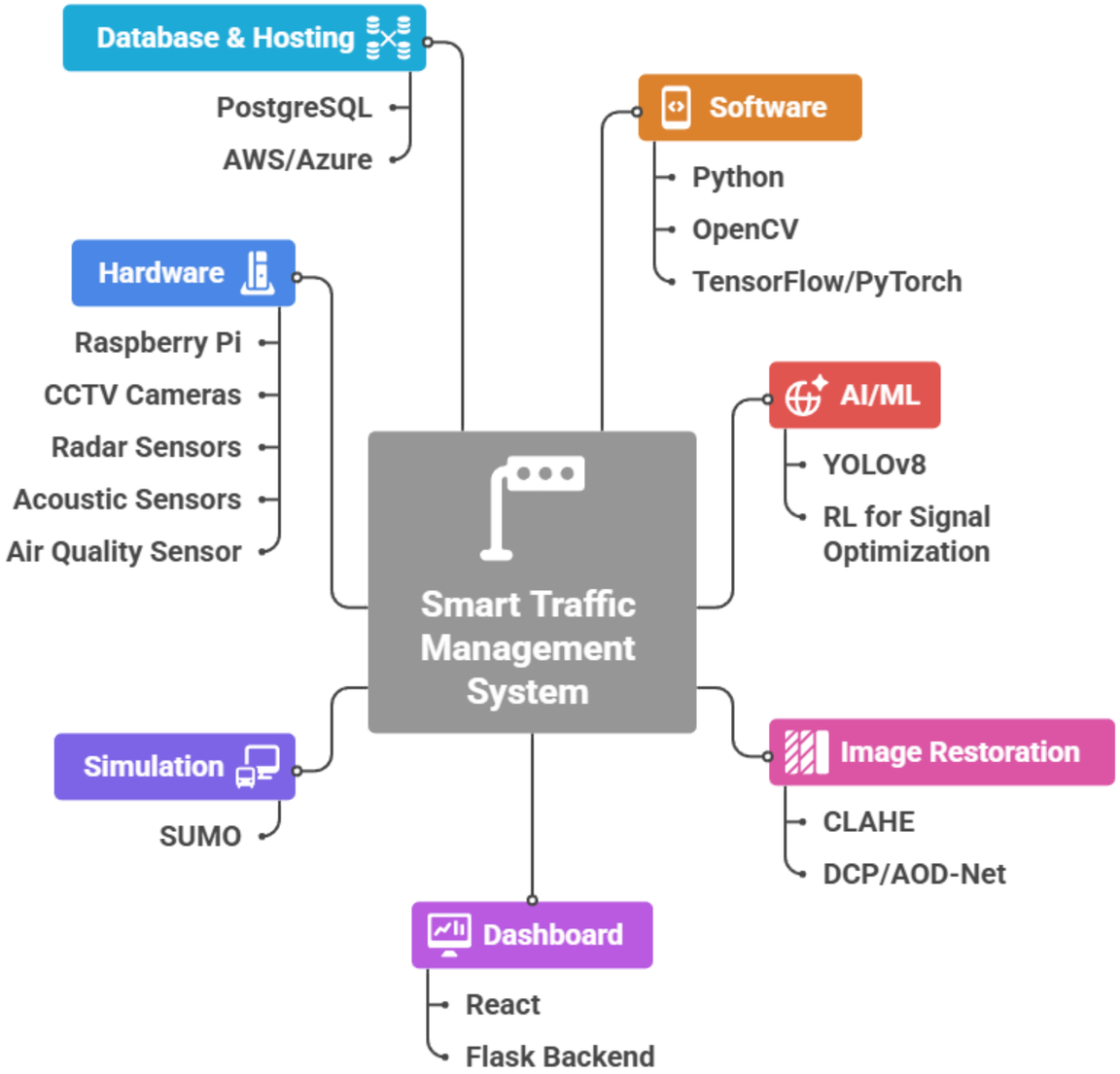
**Eco** — Fuel, time, and emission savings for environmental benefits.

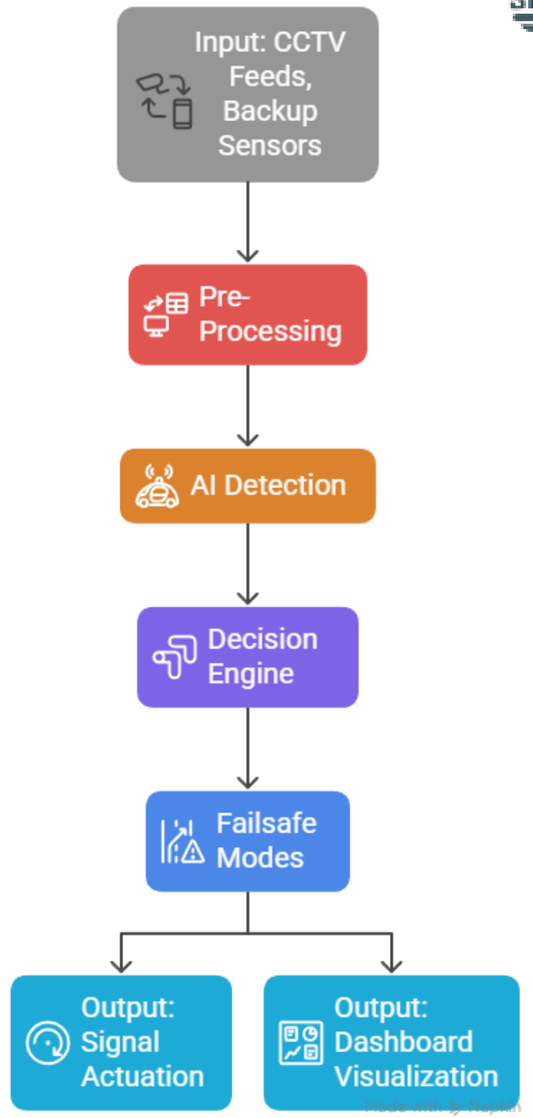
**Bilingual** — Odia and English language support for wider accessibility.

**Public** — Limited-access app with safe routes and congestion forecasts.

# TECHNICAL APPROACH





# FEASIBILITY AND VIABILITY



| Feasibility | Risk | Strategies |
|---|---|---|
| Uses existing camera infra → low extra cost. | Camera failure in fog/rain. | Backup radar/loop sensors. |
| Scalable → start with metro cities, expand to smaller ones. | Public acceptance (fairness of timings). | Default seasonal/festival timings + routes as failsafe. |
| Built on proven AI + IoT tech → reliable & quick to deploy. | System downtime (server/network failures). | Fairness algorithm (max wait-time cap). |

# IMPACT AND BENEFITS



### Faster Response

Improves emergency response with green corridors.

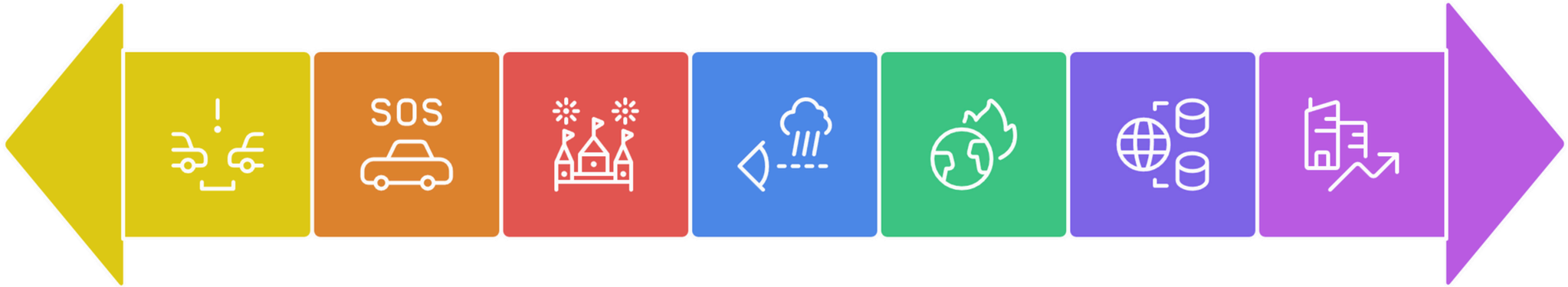
### All-Weather Reliable

Works in fog, dust, coastal humidity.

### Data Planning

Hotspots, accident zones, $CO_2$ savings.

Local




Global

### Less Congestion

Reduces traffic in cities like Bhubaneswar, Cuttack, Rourkela

### Festival-Ready

Manages traffic during Rath Yatra, Bali Jatra, Durga Puja traffic.

### Lower Pollution

Lower fuel use & pollution via countdown timers.

### Affordable & Scalable

Scalable to Tier-2 cities like Sambalpur, Berhampur & more

# RESEARCH AND REFERENCES



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3. Bhubaneswar Smart City Official Portal https://www.smartcitybhubaneswar.gov.in/

4. Odisha Transport Department – Annual Report 2021-22 (Traffic & Transport) https://odishatransport.gov.in/Application/uploadDocuments/Publication/Publication_1646378011.pdf?utm_source

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6. IJFMR – Smart Traffic Control System Using Artificial Intelligence [https://www.ijfmr.com/research-paper.php?id=...] (https://www.ijfmr.com/papers/2023/6/8511.pdf)