ISFCR HACK ATTACK 2023

TEAM JAAGRATHA

THIRD EYE, SECOND BRAIN

PROBLEM STATEMENT

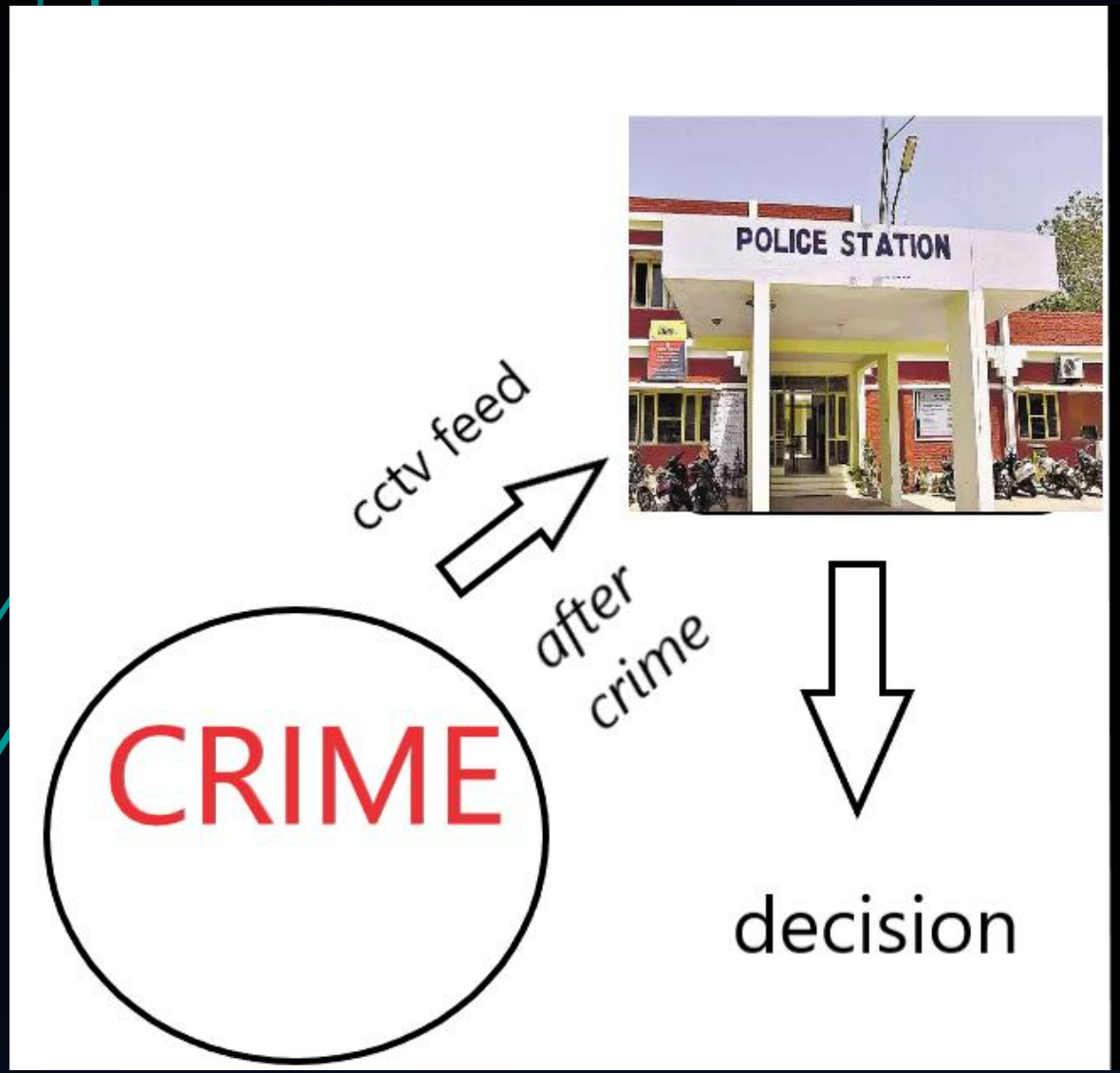
ADVANCED CCTV SOLUTION

Realtime surveillance and automated crime monitoring

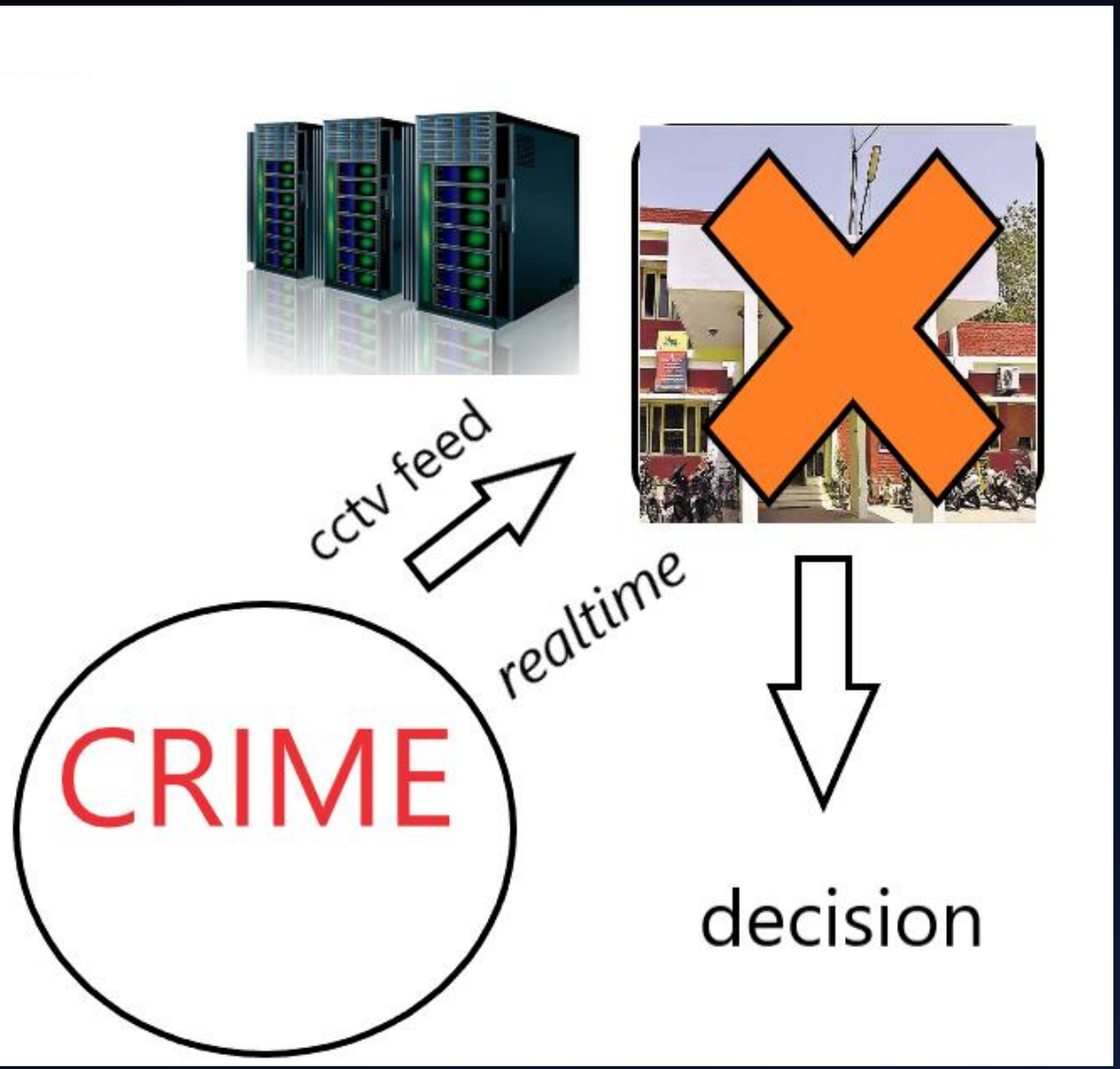
SOLUTION

Automate the existing surveillance infrastructure used by the government in public spaces, using deep learning, to detect mishaps, crime scenes and previously identified criminals, and send alerts to on-ground troops to take appropriate action.

Existing Model



Our Model



SOLUTION

HOW?

Video feed from CCTV footage is passed through a deep learning model (keras DenseNet121), fine-tuned using the UCF crime dataset (which includes 14 categories of activities)

If anomalous activity is detected, the action is flagged. Criminal detection includes face recognition, implemented using OpenCV Cascade classifier.

Alerts are sent to the nearest police stations as a phone call, email and a whatsapp message

A brief report is generated and stored in the database for further reference.

Tech stack used

Frontend – ReactJS, TailwindCSS
Backend – Flask
Database - MongoDB
ML model – UCF Crime Dataset, Tensorflow, Keras Densenet121(later fine-tuned), OpenCV
Simulating CCTV Camera input – DroidCamApp
Sending alerts - Twilio

FUTURE SCOPE

Partnering with CCTV manufacturers for a hardware-integrated approach

In-situ prediction with CCTV hardware, using pruned models

THANK YOU

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