

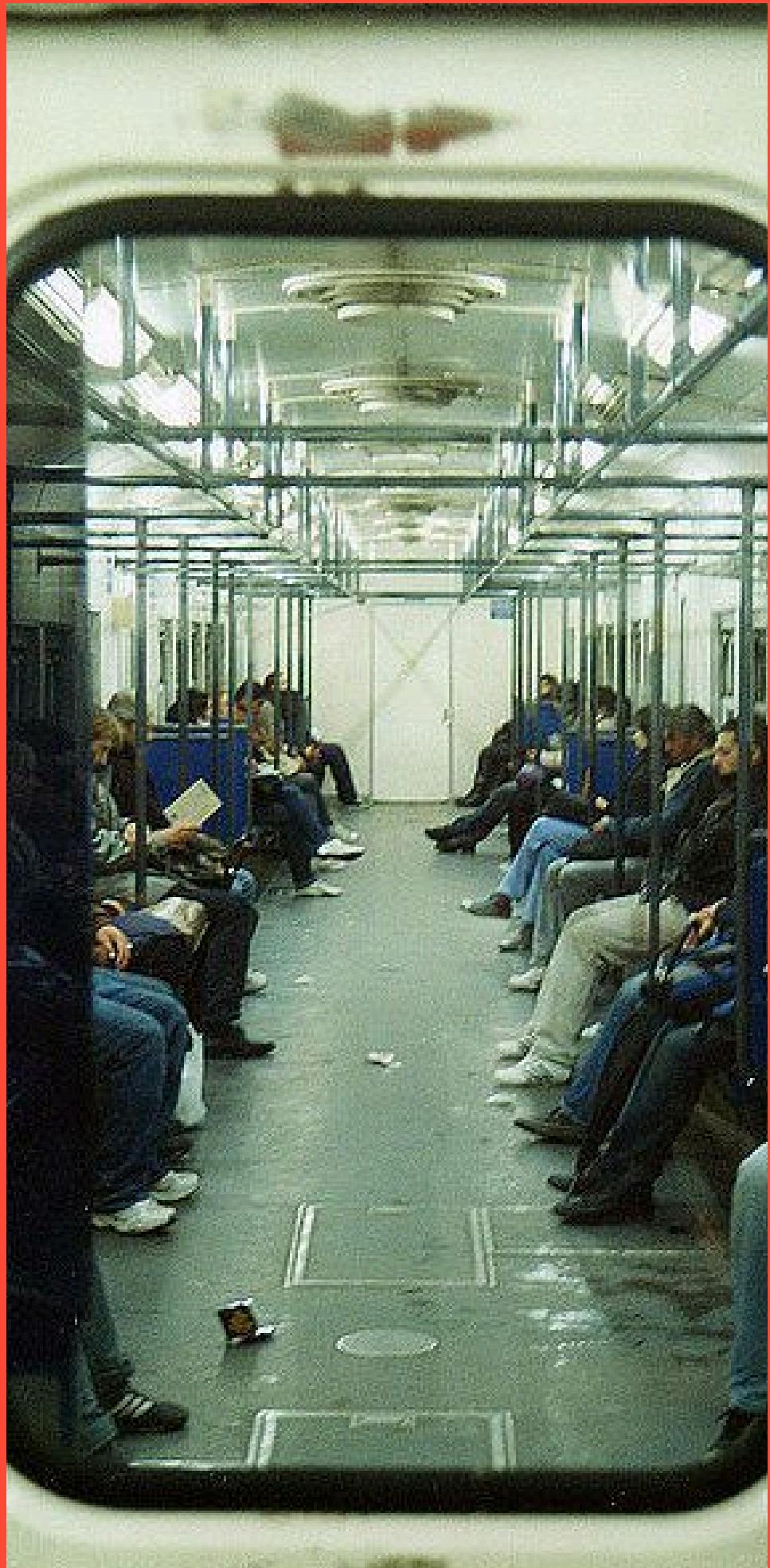
SUBWAY ALERT SYSTEM

NYC SUBWAY ALERT SYSTEM

THE PROBLEM

SUBWAY AND TRESS PASSING ON TRACKS

- **SUBWAY SURFING AND TRESPASSING
ON TRACKS/BRIDGES CAUSE
INJURIES AND DEATHS.**
 -
- **EXISTING CAMERAS MONITOR AREAS
BUT CANNOT ALERT IN REAL-TIME**
- **IMMEDIATE RESPONSE IS OFTEN TOO
SLOW**



WHO IT AFFECTS?

- **SUBWAY RIDERS AND PEDESTRIANS**
- **TRAIN DRIVERS**
- **INTERNAL SECURITY & POLICE**
- **NYC TRANSIT AUTHORITY AND THE PUBLIC**
-

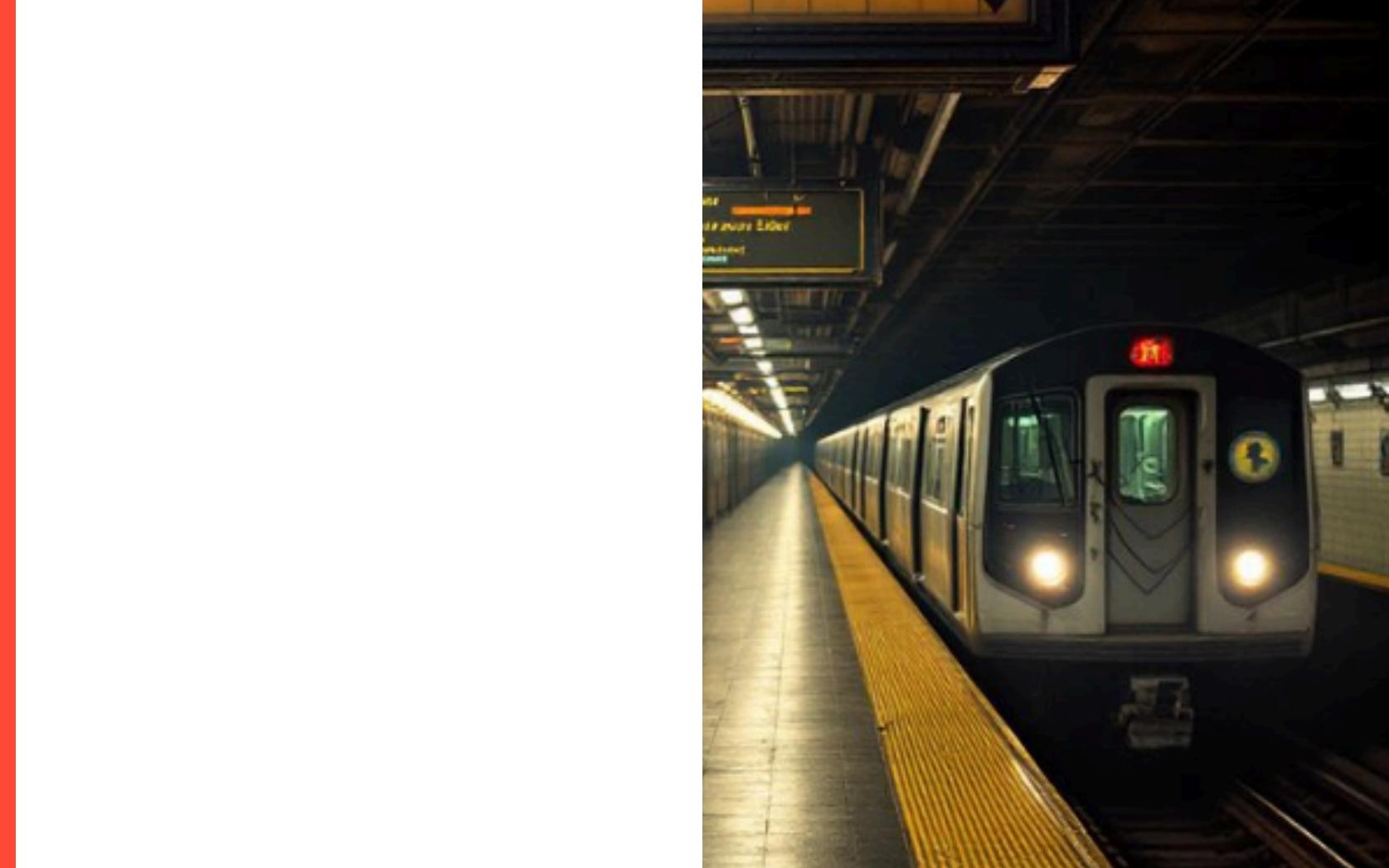


OUR SOLUTION

SUBWAY

REAL-TIME SENSOR + CAMERA. SYSTEM

- ALERTS TRAIN DRIVERS AND SECURITY IMMEDIATELY
- DISPLAYS LIVE FOOTAGE AND LOGS INCIDENTS



02

SYSTEM ARCHITEC TURE

(03)





03

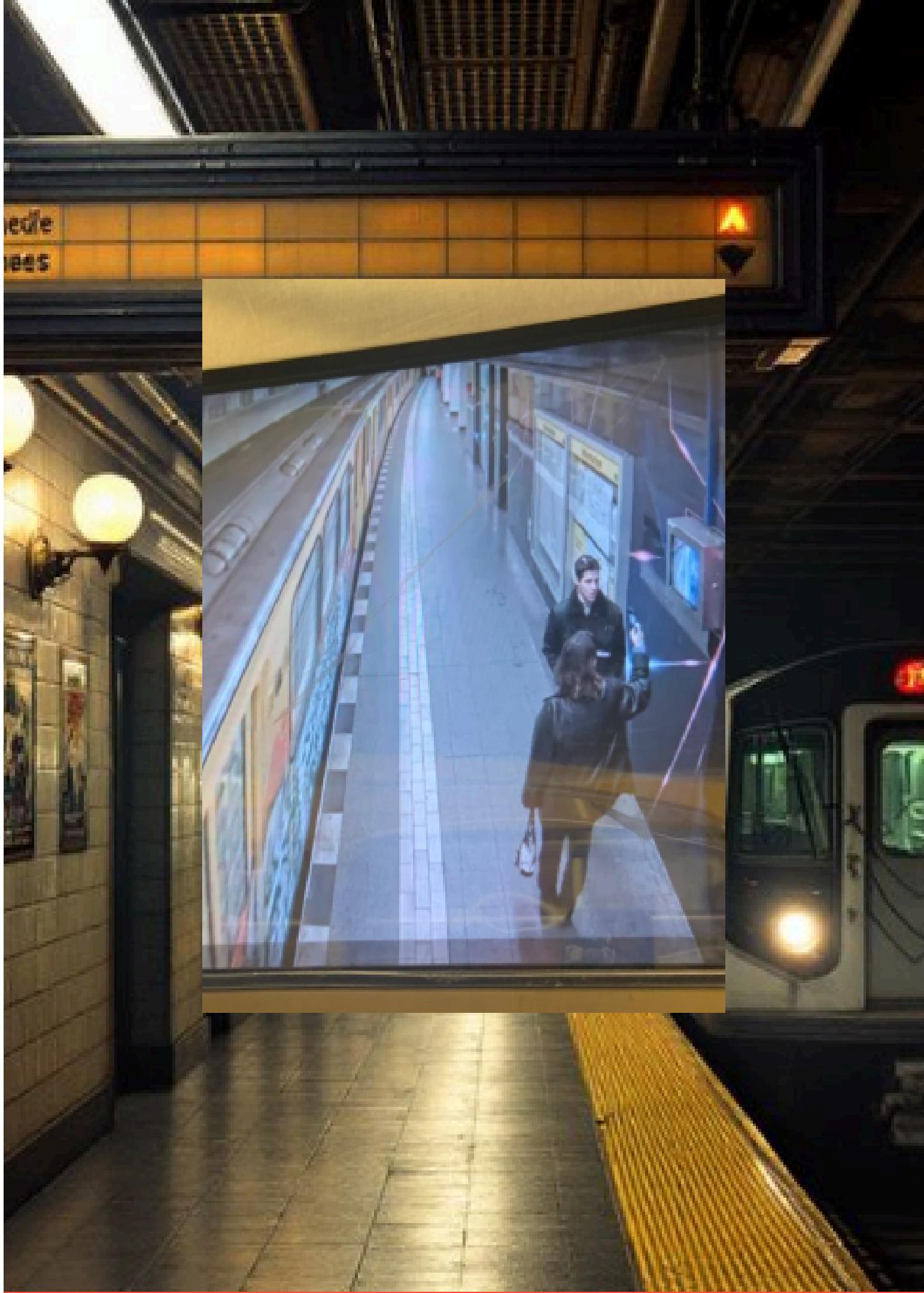
HOW IT WORKS

INPUTS:

- MOTION/INFRARED/PRESSURE SENSORS
- CCTV CAMERA FEEDS
- TRAIN LOCATION & SPEED

OUTPUTS:

- ALERT TO TRAIN DRIVERS
- NOTIFICATION TO INTERNAL SECURITY / POLICE
- LIVE VIDEO FEED
- INCIDENT LOGS



KEY VARIABLES & DATA TYPES



*DATA TRACKED IN THE
SYSTEM*

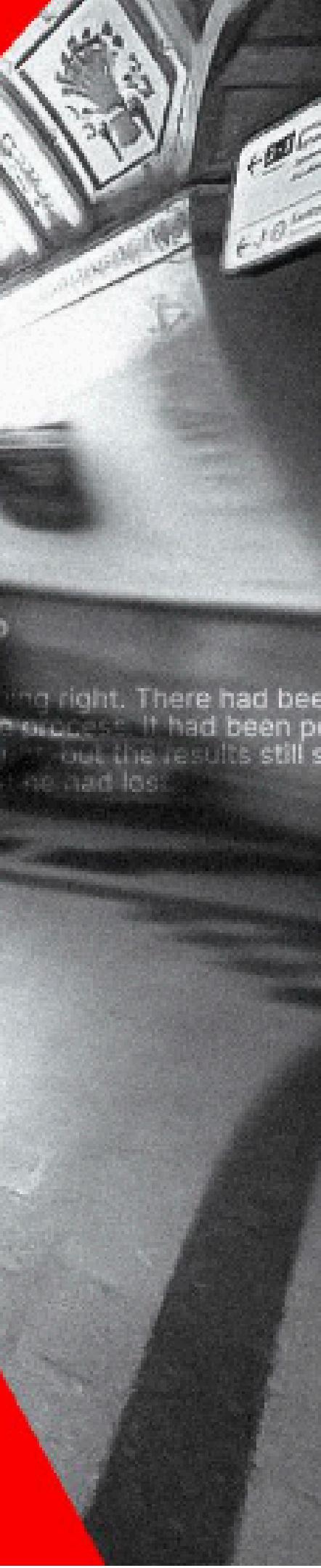
04

BOOL TRESPASSDETECTED;
DOUBLE SENSORLOCATION;
DOUBLE TRAINSPEED;
STD::STRING
CAMERAFEEDURL;
BOOL ALERTSENT;
TIME_T TIMESTAMP;

05 SYSTEM LOGIC

- PSEUDOCODE

```
WHILE THE SYSTEM IS ACTIVE
  FOR EACH MONITORED AREA
    READ SENSOR DATA
    IF TRESPASSER DETECTED
      SEND ALERT TO TRAIN &
      POLICE
      DISPLAY CAMERA FOOTAGE
      LOG INCIDENT
    ENDIF
  ENDFOR
ENDWHILE
```



05

C++ TEXT CONNECTION

- WHILE → WHILE(TRUE) LOOP
- FOR → FOR LOOP OVER STD::VECTOR<MONITOREDAREA>
- IF → IF(TRESPASSDETECTED)
- SEND ALERT → FUNCTION CALL LIKE
SENDALERT(TRAINID, LOCATION)
- LOG INCIDENT → OFSTREAM TO WRITE LOGS

BENEFITS & IMPACT

- **PREVENTS ACCIDENTS & SAVES LIVES**
- **ALERTS TRAIN DRIVERS IMMEDIATELY**
- **REDUCES RESPONSE TIME FOR
POLICE/SECURITY**
- **DATA HELPS IDENTIFY HIGH-RISK AREAS**

SUMMARY & NEXT STEPS

jeshika chaulagainka

- **DESIGNED A REAL-TIME SUBWAY SAFETY ALERT SYSTEM**
- **INTEGRATED SENSORS, CAMERAS, ALERTS, AND LOGS**
- **NEXT: ADD AI FOR AUTOMATIC DETECTION, PREDICTIVE ANALYTICS,
APP INTERFACE FOR SECURITY**

SUBWAY ALERT SYSTEM

THANK YOU!

INTRO TO C++

JESHIKA CHAULAGAIN