

# Transit Watch

Transforming Transit with **AI Insight**

Solution Offering



# Transit Watch : Transforming Transit with AI Insight

## Objective

Design and deploy a centralized, real-time computer vision system for metro station environments, leveraging edge AI to enhance passenger safety, security monitoring, and operational intelligence. Transit Watch integrates multiple AI-powered surveillance and analytics modules into a unified platform optimized for urban transit infrastructure.

## Tech stack

- Yolo11/tiny – based models
- React JS
- Age\_Deploy.prototxt/Gender\_Net.caffemodel

## NVIDIA Setup

- TensorRT (Nvidia hardware specific model optimization)
- NVIDIA Jetson AGX Dev Kit

## Intel Setup

- OpenVINO (Intel hardware specific model optimization)
- ASUS NUC PRO 15+ with Intel® Core™ Ultra 9 285H

## Key features

- **Real-time Detection:** Capable of identifying unattended bags, yellow line crossing, wrong direction movement, and intruders.
- **Edge Deployment:** Optimized for deployment on Intel Edge Devices using lightweight models.
- **Modular Backend:** Features a scalable backend with APIs and a React-based front-end dashboard.

## AI-Powered metro Station Surveillance



Unattended Bag Detection



Intruder Detection

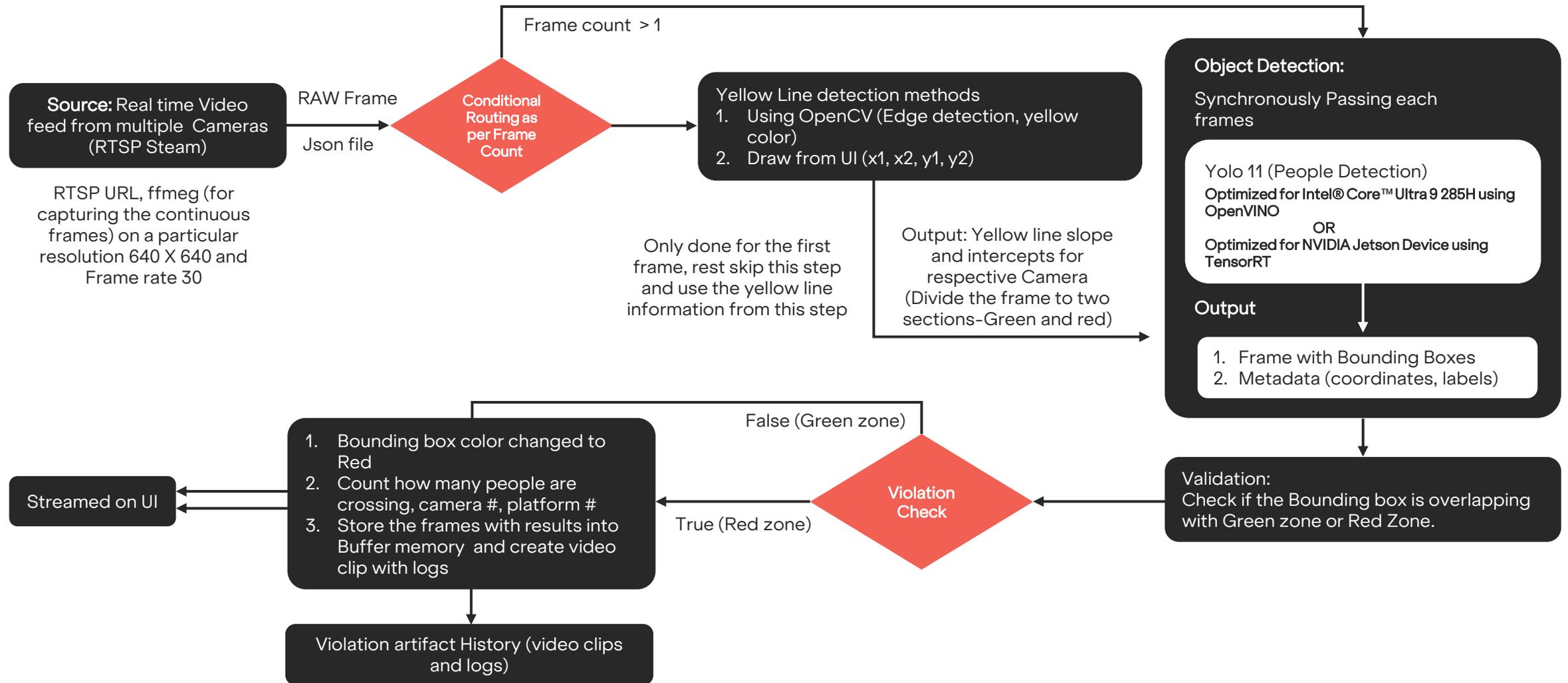


People Moving In Wrong Direction



People Crossing Safety Line

# Sample Functional Flow: Yellow Line Crossing



# TransitWatch : Application Screenshots - NVIDIA

**Dashboard**

Total Passengers: 24000

Yellow Line Detection: 456

Unattended Bags: 232

Ads Recommendation: 451

Metro Crowd: 36

**Yellow Line Detections**

**Unattended Bags Detections**

Itimindtree.sharepoint.com is sharing your screen and audio. Stop sharing Hide

**Selected Files**

bags\_detection\_unit.mp4 1.6 MB

**Video Preview**

Unattended bag: 0.38

Upload

**Yellow Line Detection**

**Unattended Bags Detection**

**Weapon Detection**

**Intruder Detection**

**Crowd Detection**

**Ads Recommendation**

0:00 / 0:55

**Live Stream** **Upload File**

**Selected Files**

crowd\_sample.mp4 1.3 MB

**Video Preview**

**Processed Video**

Total count of people in coach: 14

Person 1, Person 2, Person 3, Person 4, Person 5, Person 6, Person 7, Person 8, Person 9, Person 10, Person 11, Person 12, Person 13

Upload

# TransitWatch : Application Screenshots - Intel

## Transit Watch : Unattended Bags Detection

The screenshot displays the Transit Watch application interface. The browser address bar shows the URL `https://lscpu.us/?viewmode=11&gotonode=uFXELc$DHcqwx@oDzgEoMXGVLc`. The application is connected to a stream, as indicated by the 'Connected, 2 watching' status. The main view is titled 'Live Video Stream LIVE' and shows a camera feed of a transit station platform. A green bounding box highlights a dark bag on the floor, with a red text overlay that reads 'Unattended Bag ID 75 | 56.6s'. The left sidebar contains a menu with various detection features, including 'Unattended Bags Detection' which is currently selected. At the bottom, there is a system tray with keyboard shortcuts like 'Alt + Ctrl + Del', 'Send', 'Clipboard', 'Type', and 'Input'.

## Transit Watch : Yellow-line crossing

The screenshot displays the Transit Watch application interface for a different detection feature. The browser address bar shows the URL `https://lscpu.us/?viewmode=11&gotonode=uFXELc$DHcqwx@oDzgEoMXGVLc`. The application is connected to a stream. The main view is titled 'Live Video Stream LIVE' and shows a camera feed of a transit station platform. A yellow line is drawn across the platform, indicating a crossing. The left sidebar contains a menu with various detection features, including 'Yellow Line Detection' which is currently selected. At the bottom, there is a system tray with keyboard shortcuts like 'Alt + Ctrl + Del', 'Send', 'Clipboard', 'Type', and 'Input'.

# TransitWatch : Application Screenshots - Intel

## Transit Watch : Intruder Detection

The screenshot shows the Transit Watch application interface for Intruder Detection. The browser address bar displays `https://lscpu.us/?viewmode=11&gotonode=uFXELc$DHcqXw@oDzgEoMXGVLC`. The application's left sidebar lists various detection modules, with "Intruder Detection" highlighted in green. The main content area features a "Live Video Stream" with a "LIVE" indicator. The video shows a train platform with a red polygon overlaid on the ground, indicating a detected region. The video timestamp is `25/06/27 08:52:34` and the camera ID is `HSG-CTV-PTZ-003`. The top of the interface includes "Disconnect" and "Connected" buttons, and the bottom shows system tray icons for "Alt + Ctrl + Del", "Send", "Clipboard", "Type", and "Input".

## Transit Watch : Wrong Direction

The screenshot shows the Transit Watch application interface for Wrong Direction Detection. The browser address bar displays `https://lscpu.us/?viewmode=11&gotonode=uFXELc$DHcqXw@oDzgEoMXGVLC`. The application's left sidebar lists various detection modules, with "Wrong Direction Detection" highlighted in green. The main content area features a "Live Video Stream" with a "LIVE" indicator. The video shows a station interior with a red polygon overlaid on the floor, indicating a detected region. The video timestamp is `2025/02/20 08:52:34`. The top of the interface includes "Disconnect" and "Connected" buttons, and the bottom shows system tray icons for "Alt + Ctrl + Del", "Send", "Clipboard", "Type", and "Input".

# TransitWatch : Results from Live Demo Setup

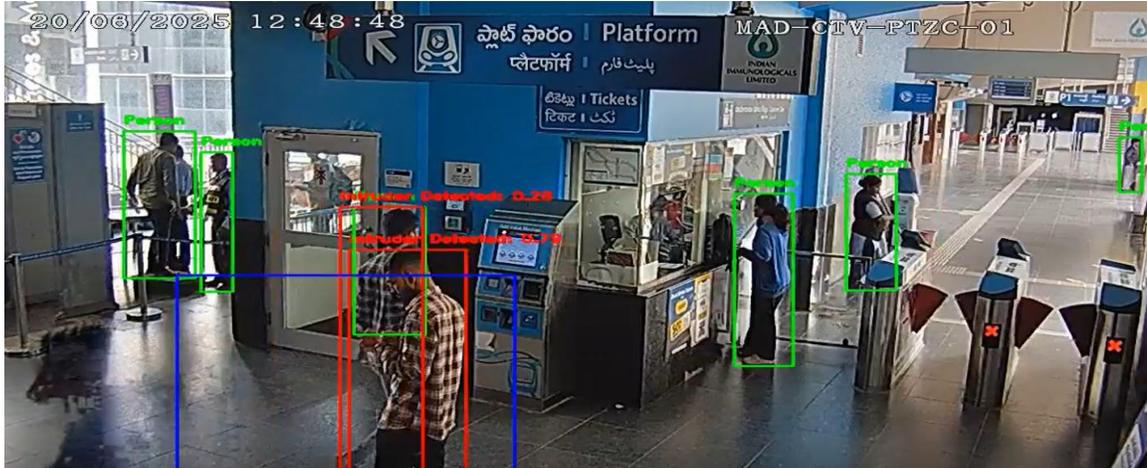
## Crowd Detection



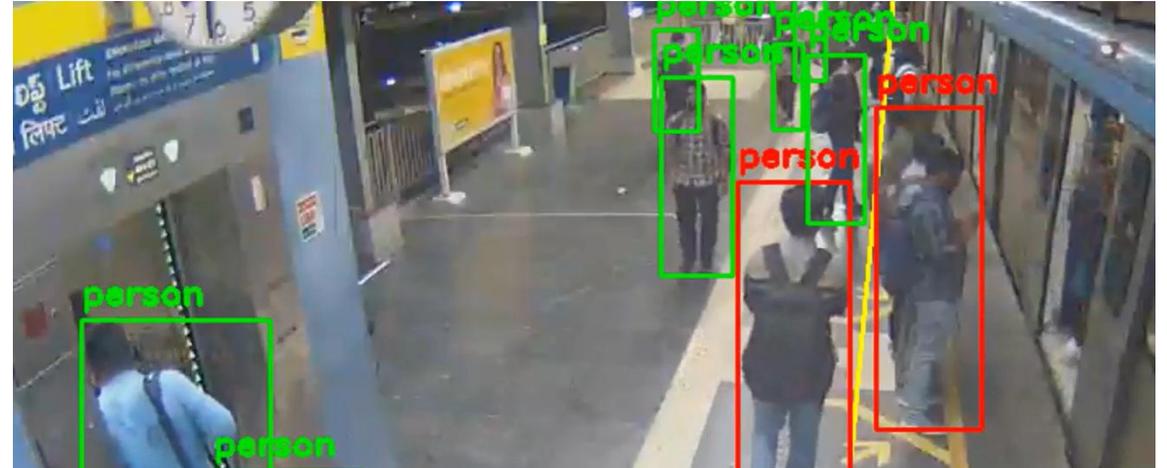
## Unattended Bag Detection



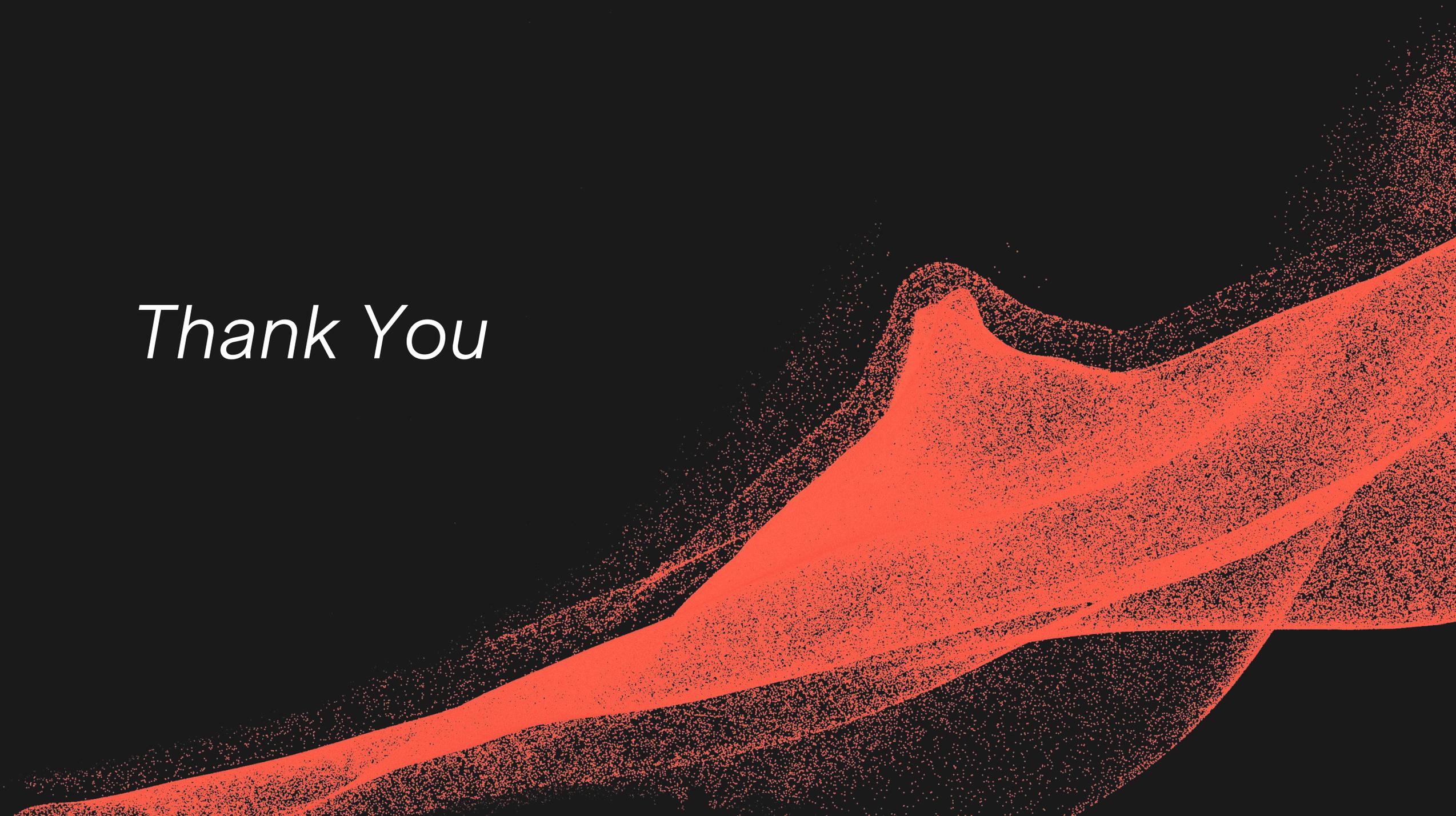
## Intruder Detection



## Yellow Line Crossing Detection



*Thank You*

The background features a dark, almost black, field with a fine, grainy texture. A large, flowing, and somewhat abstract shape in shades of red and orange dominates the right side of the image. This shape has a textured, stippled appearance, similar to the background, and flows from the top right towards the bottom left, creating a sense of movement and depth.