



# INKVISION.AI

Artificial Intelligence and Machine Learning based Video Analytics for Enterprise, Security and Defense Applications.



## OVERVIEW

Analysis of video content has become a key challenge for all organizations, be it education, defense, security, government, or enterprise. A structured method for analysis and management of the video content generated is need of the hour. InkJision aims at fulfilling this need.

InkJision.AI is an Artificial Intelligence driven Video Analytics solution from Mistral made available in association with INKERS, a leading provider of AI based software and algorithms. The InkJision.AI provides actionable intelligence based on the video captured from different sources. It can be used onsite for real-time analysis, or for post-event investigations. The InkJision.AI follows an AI and ML approach, where each step of data collected and analyzed, improves the system in a continual process.

The InkJision.AI comprises of proprietary deep AI models, that excel at visual comprehension. Each pixel block is analyzed semantically and tagged accordingly, enabling large scale face detection and recognition, image segmentation, monocular depth estimation, super resolution (especially faces), human pose estimation, scene and activity recognition.

The InkJision.AI algorithm also integrates motion prediction and estimation strategies across frame prediction probability distribution, reducing overall computation requirements.

## FEATURES

The InkJision.AI is a fully automated, scalable and future ready solution ensuring:

- Scalability - adding more cameras or features just requires adding required compute hardware
- Unbiased analytics - avoiding human errors
- Realtime adaptive system to minimize false alarms
  - Learns the scene under observation
  - Doesn't require tuning or tweaking of calibration parameters
  - Normal behavior of persons/vehicles in given zone to detect anomaly
  - Adjusts to lighting or atmospheric changes (rain/hail/wind/swaying trees) to reduce false alarm
  - Adjusts to layout changes, etc
- Real time data to support decision making process in immediate/short/long terms
- Capability to analyze person/vehicle flow and behavior as well as simulate and predict situations
- Continuous Learning
  - Solution designed for continual learning
  - Learning on live data is performed occasionally to improve the accuracy and predictability of the system.



## HIGHLIGHTS



**Traffic violation Detection  
& Crowd Management**



**People Detection,  
Recognition and Tracking**



**Object Tracking  
Across Cameras**



**Large Scale  
Face Detection**

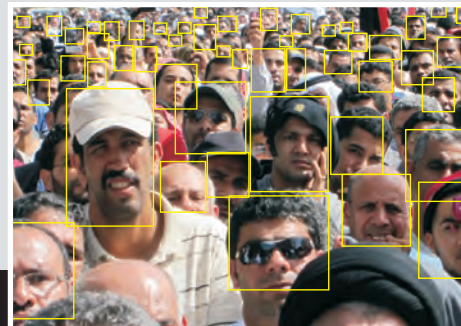
# ANALYTICS FOR SAFE & SMART CITIES

The InkVision.AI is ideal for Smart City projects, providing a range of algorithms for implementing traffic management and safe/clean city applications.



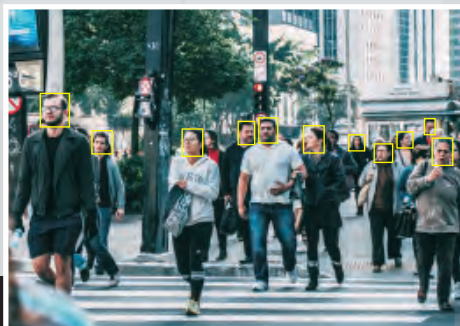
## TRAFFIC AND ROAD SAFETY

- Red Light, Zebra Crossing Violation Detection
- Speed, Wrong Direction, No Helmet, Triple riding and Detection
- Parking Violation, Accident Detection
- Vehicle Tracking based on Color, Speed, Number plate
- Unwanted/banned Vehicle Detection



## CROWD MANAGEMENT

- People Counting
- People Tracking and Attribute-based search
- Behavioural Biometry
- Detection and Classification of Human, Animal and Vehicle
- Person Collapsing



## FACE DETECTION AND RECOGNITION

- Attendance
- Unauthorized People Alerts
- Activity Monitoring
- Facial Recognition-based Tracking across Cameras



## SAFE AND CLEAN CITY

- Unattended Object
- Tripwire
- Intrusion, Graffiti and Litter Detection
- Debris and Garbage
- Sweeping and Cleaning of Streets



Activity Detection



Human Pose Estimation



Feature Extraction



Object Detection Classification and Tracking

## INKVISION.AI EDGE

- Up-Scale to higher number of Cameras with accuracy
- On-prem and On-edge solutions providing complete data security
- Capability to enhance GPU performance by 2.5 times
- Future-ready with continuous learning capability
- Custom Analytics to address customer's key needs
- Agnostic to the make and model of Video Management Software (VMS).

## SYSTEM REQUIREMENT

Minimum Server Configuration	
CPU	2 x Intel Xeon Gold 6130 2.1 GHz
GPU	NVIDIA Tesla P4 8GB (1- 6 based on number and type of analytic channels)
OS Drive	256GB SSD
RAM	256GB
OS	Ubuntu Linux
HDD	4TB (Excluding NVR Storage)

## APPLICATIONS

The InkVision.AI is an ideal Vision Analytics and AI tool for Homeland Security and Smart City applications. Based on cutting edge Artificial Intelligence technology, the InkVision.AI can process live camera feeds to achieve the objectives of Smart City Mission (SCM) under Smart Urban Solutions by providing improved visualization of ambient or emergency situation in the city and facilitating data driven decision making.

- Real-time Video Analysis for Crowd and Traffic Management
- Enhanced safety and security with features like Intruder Alert, Abandoned Object Detection, Behavior Analytics etc.
- Rapid people identification during Disaster Management and Emergency Response
- Improvement in efficiency of public service delivery (Fire Detection, Illegal parking etc.)
- Better management of public infrastructure and utilities.

### ABOUT MISTRAL

Mistral's Homeland Security domain offers a variety of security and surveillance solutions such as Command and Control Centres, Mobile C4ISR, Video Analytics & Traffic Management Systems that are designed for the use of Special Forces, Police and Para-Military for Emergency Response Management, Disaster Management and Border Surveillance.

Mistral's Homeland Security solutions enable the government to upgrade and modernize their set-up and systems, with the latest technologies and equipment.

These solutions provide the information in real time, enabling quick and rapid decision making.



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