Use Case

Human Suspicious Activity Detection

Function : #For precise image classification | **Industry :** #Computer Vision

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Goal

- To detect any type of suspicious activity performed by a human.
- To classify activity into its particular class for effecting an immediate necessary action.
- To monitor high level patterns of activity and identify early indicators.

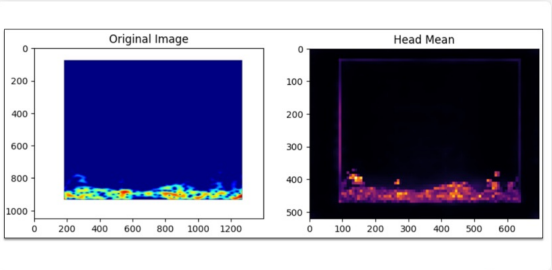
Technique

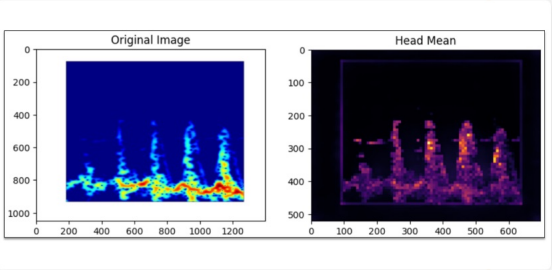
- Exploratory Data Analysis
- Image pre-processing and augmentation
- Object detection and Image classification algorithms
- Visualisation

Impact

- Quicker and better suspicious activity detection.
- Creation of a safer environment for people.
- Attention based system for a more aggressive detection.
- Lesser Human Intervention.

Result





Value Points

Understand the **what, why, when, where** & **how**

Data Preprocessing

Image augmentation and enhancement techniques to mitigate the risk of overfitting in the model.

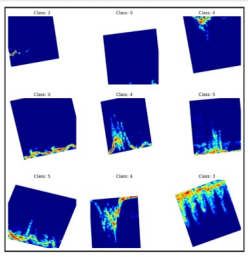
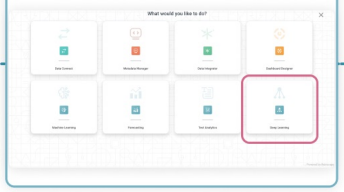
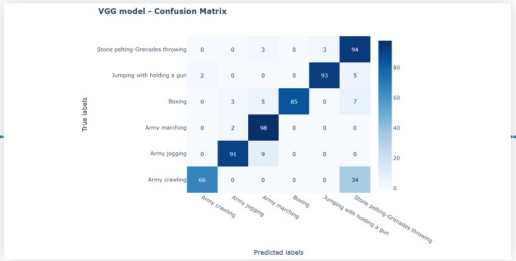


Image pre-processing using augmentation techniques and labelling

Image augmentation generates additional data for model to learn. Image labelling is preprocessing step for model building.

Model Building

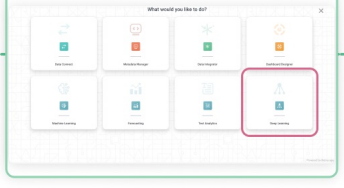


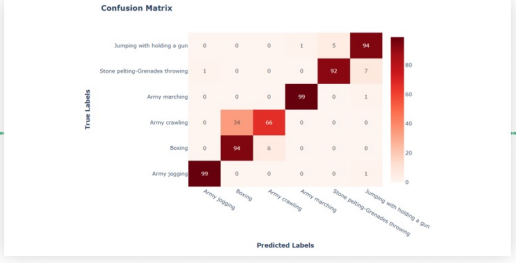


Classification using Convolutional Neural Networks

Conventional CNNs are computationally lighter and hence are quicker in response

ViT(Attention) Analysis





Classification using Transformers Architecture

Attention based Transformers Architecture helps to achieve more aggressive detection of Human Suspicious Activity rather than conventional CNNs.

Multi Persona DSML Platform

For all your data needs- Data Engineering, Data Science, Data Visualisation, IoT

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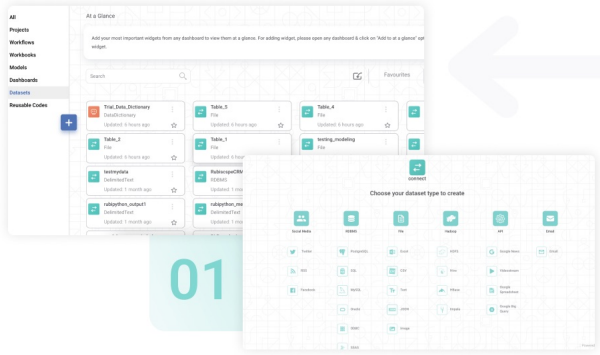
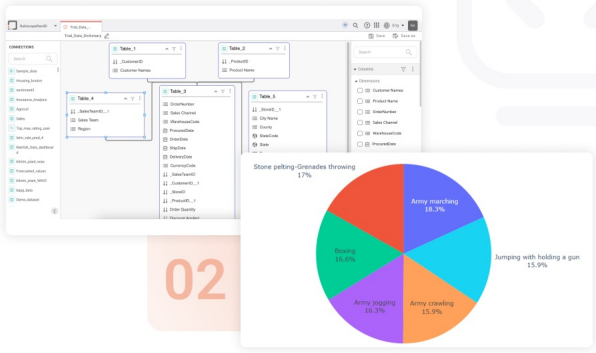
Data Connect



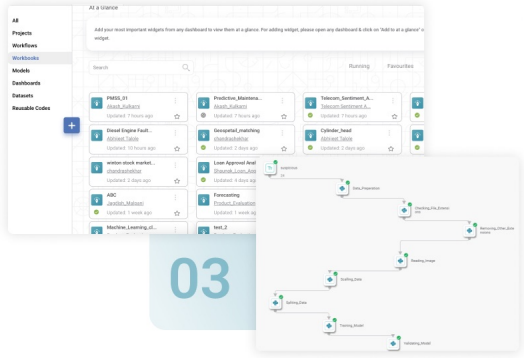
Data Source: DIAT-µRadHAR

Metadata Manger



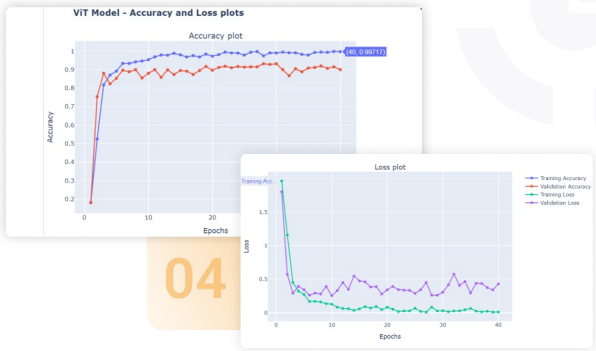
Comprehensive Data Operations, encompassing Metadata Management

Model Studio



Modelling, encompassing the selection and configuration of models

Visualisation



Viz Ops, Illustrating The Core Trends And Graphical Representations

Agile Data Science

Encapsulating **best practices**, tools and **methods**

Data Ops

Data Architect · Data Manager

ML Ops

ML Experts · Data Scientist

Viz Ops

CXO · Analyst

Tech Ops

Administrator · Cloud architect

Ideate

- What is the **goal**?
- How can you leverage the **data**?
- What do you want to **predict**?

Acquire

- How is data **sampled**?
- Which data is **relevant**?
- Any data **privacy** issue?

Explore

- Plot the **data**
- Are there **anomalies**?
- Are there **patterns**?

Model

- **Build** a model
- **Fit** the model
- **Validate** the model

Present

- What did we **learn**?
- Do the results make **sense**?
- Can we tell a **story**?

Deploy

- Where to **Deploy**?
- What is the **Structure** of Pipeline?
- How to **Optimise** and **Scale**?