

MS-CALID: a Context-Aware Local Infrastructure Detection and Monitoring System

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Our intelligence is what makes us human, and AI is an extension of that quality.

Yann LeCun

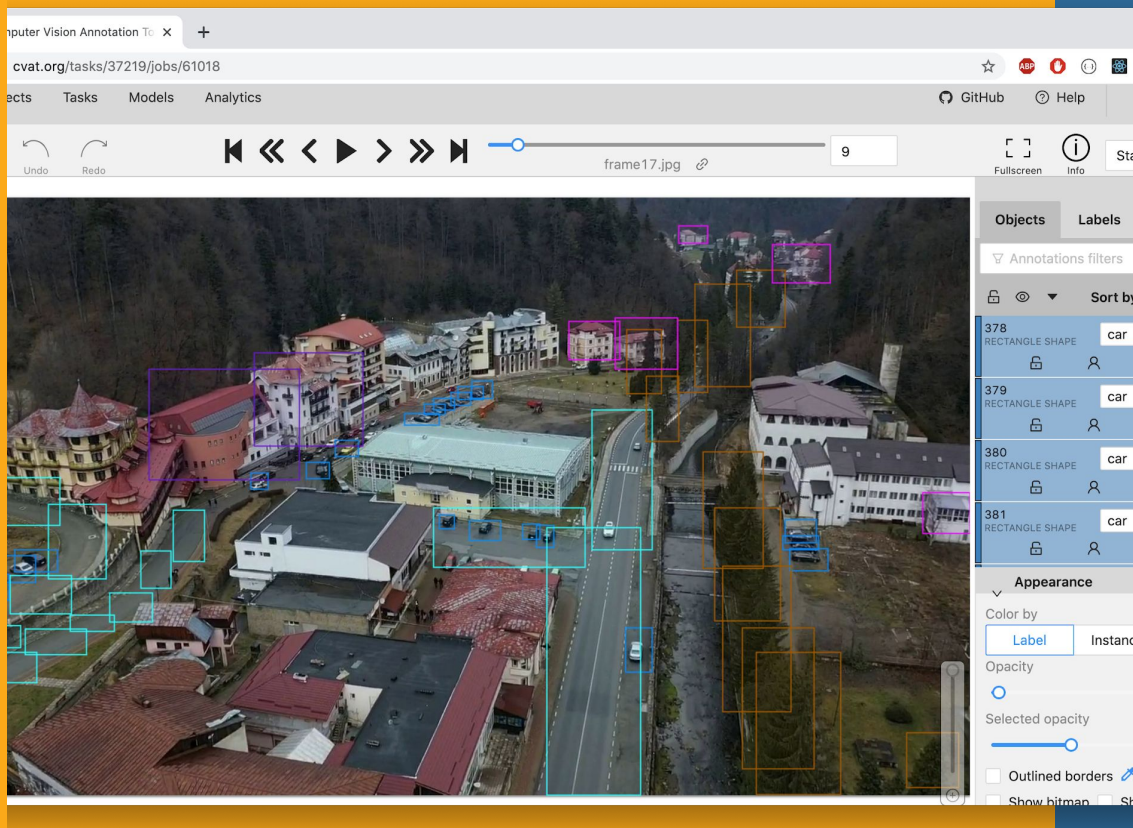
Professor, New York University



MS-CALID

Aims to be an automated software system for local infrastructure detection and monitoring built on top of YOLOv4.

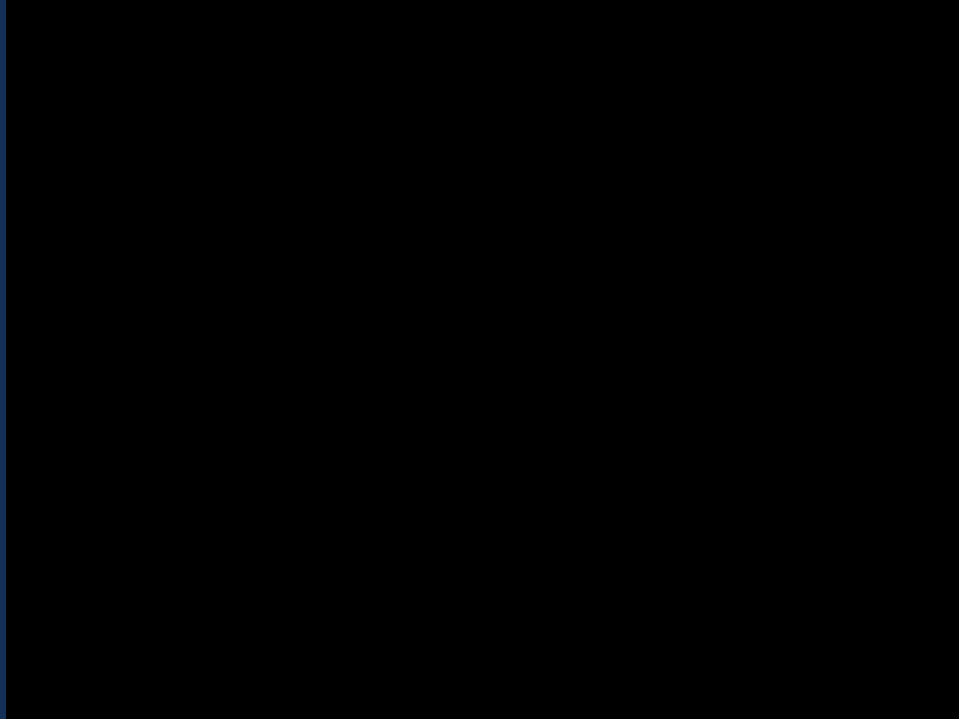
Capable of detecting: households, houses, administrative buildings, hotels, religious entities, public roads, number of cars, alleys and parks, vegetation and offer live monitoring solutions such as notifications on traffic values



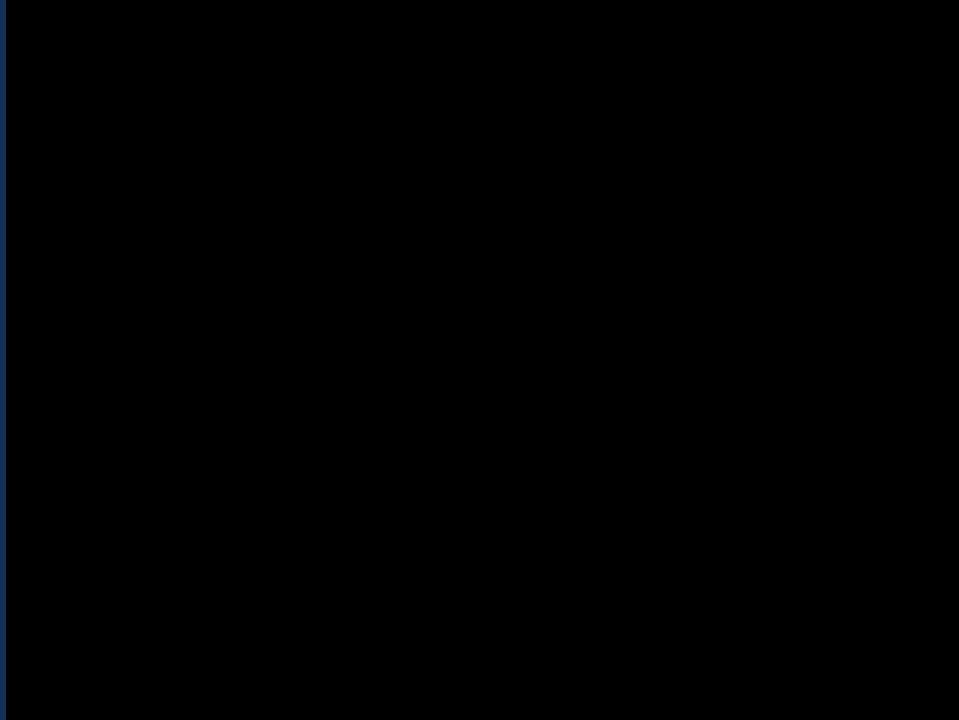
MS-CALID

- Trained on a custom labelled dataset consisting of hundreds of aerial frames obtained from the region of **Slanic-Moldova, Bacau, Romania.**

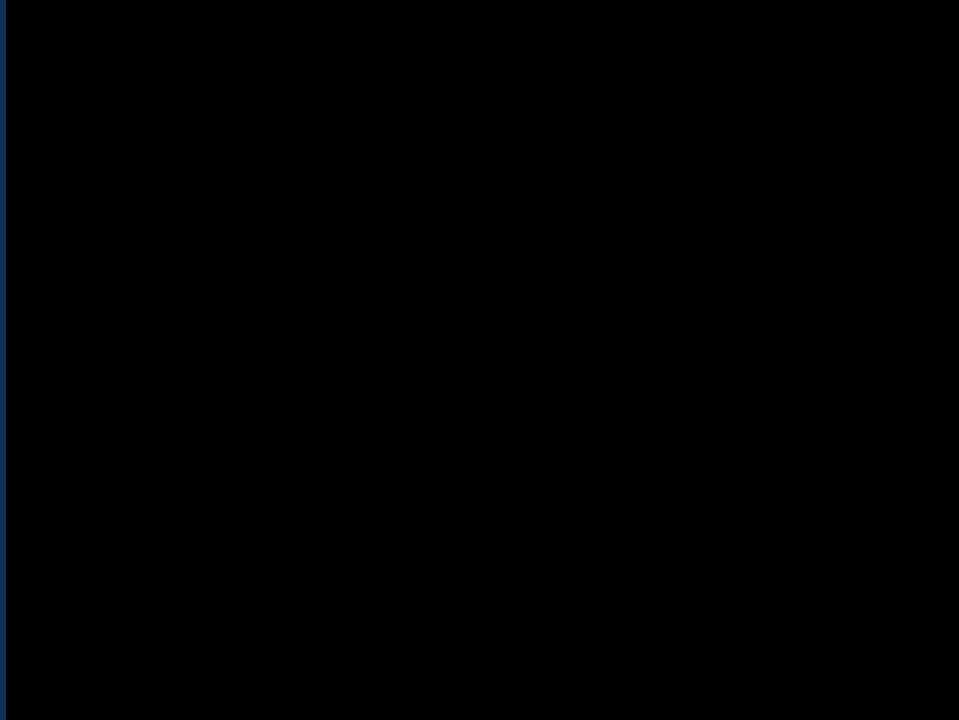
Road, alley and cars detection



Object Tracking



Object detection



Performance

24h

Training time on a
Nvidia 1060 6 GB

6000

Total trained epochs

3251

Labelled objects

9 FPS

Live processing
performance

99.35%
mAP

High accuracy
performance

Takeaways

1

Fast and Real Time Detection

2

High accuracy

3

We are still far away from solving the problem of Computer Vision.



**Reason for
Takeaway 3.**

Thank you!

The screenshot displays the GitHub repository for **MS-CALID** by **raresraf**. The repository page on the left shows the **master** branch with recent commits to **dataset**, **src**, and **README.md**. The **README.md** section describes **MS-CALID** as a Context-Aware Local Infrastructure Detection and Monitoring System, building a supervised software system for understanding the local environment based on aerial image processing.

To the right, the project's documentation is shown, including a PDF of the paper **MS-CALID: a Context-Aware Local Infrastructure Detection and Monitoring System**. The paper's abstract states: "This paper presents the work for the Computer Vision Project during the 2023 Computer Vision Class held in Faculty of Automatic Control and Computers, University Politehnica of Bucharest. We aim to present an automated system that is capable of detecting in a supervised manner the local infrastructure of a specific geographical region." The paper also lists authors **Rares FOLEA** and **Andrei VAIANU** from the Faculty of Automatic Control and Computers, University Politehnica of Bucharest.

Follow **MS-CALID** development:
<https://github.com/raresraf/MS-CALID/>