Helping Vilnius Citizens with Computer Vision

Leveraging **Machine Learning and ArcGIS** to make life in Vilnius better

Authors

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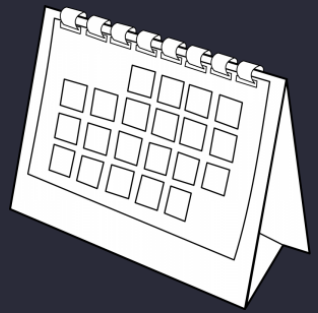
Date

2023.06.09

Agenda



- Our drone fleet
- Data collected from drones
- Computer vision models
- Solutions from user perspective
- AI benefits for Vilnius

Drones in Vilnius

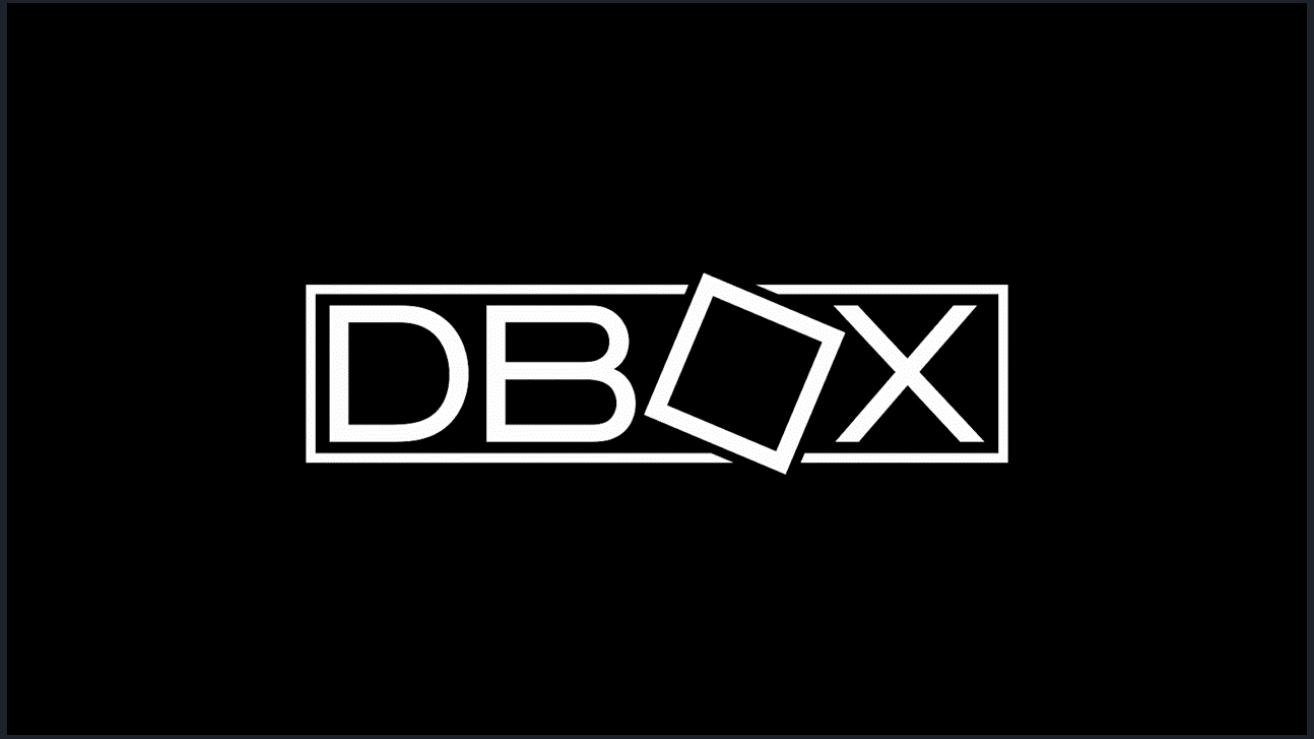
A **drone** is an ***aircraft without any human pilot, crew, or passengers on board.***

DJI Mavic 2 Enterprise Advanced

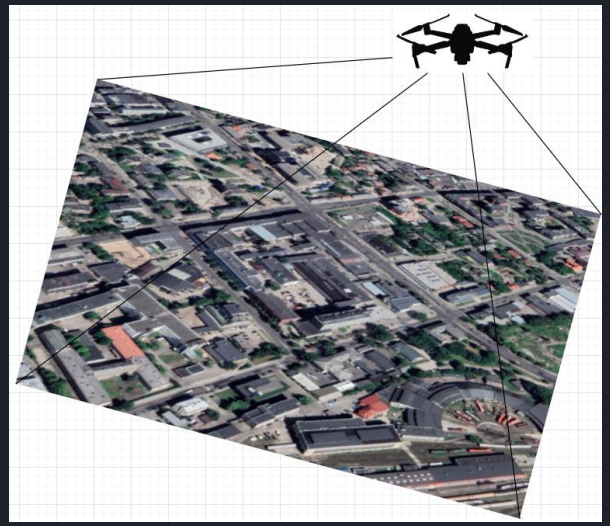
Parrot ANAFI Ai

- **~10 missions per day**
- **~300 high resolution images per day**
- **>2 hour of video content per day**
- **6 drones in total**
- **5 pilots**

Inflight refuel



DATA FROM DRONES

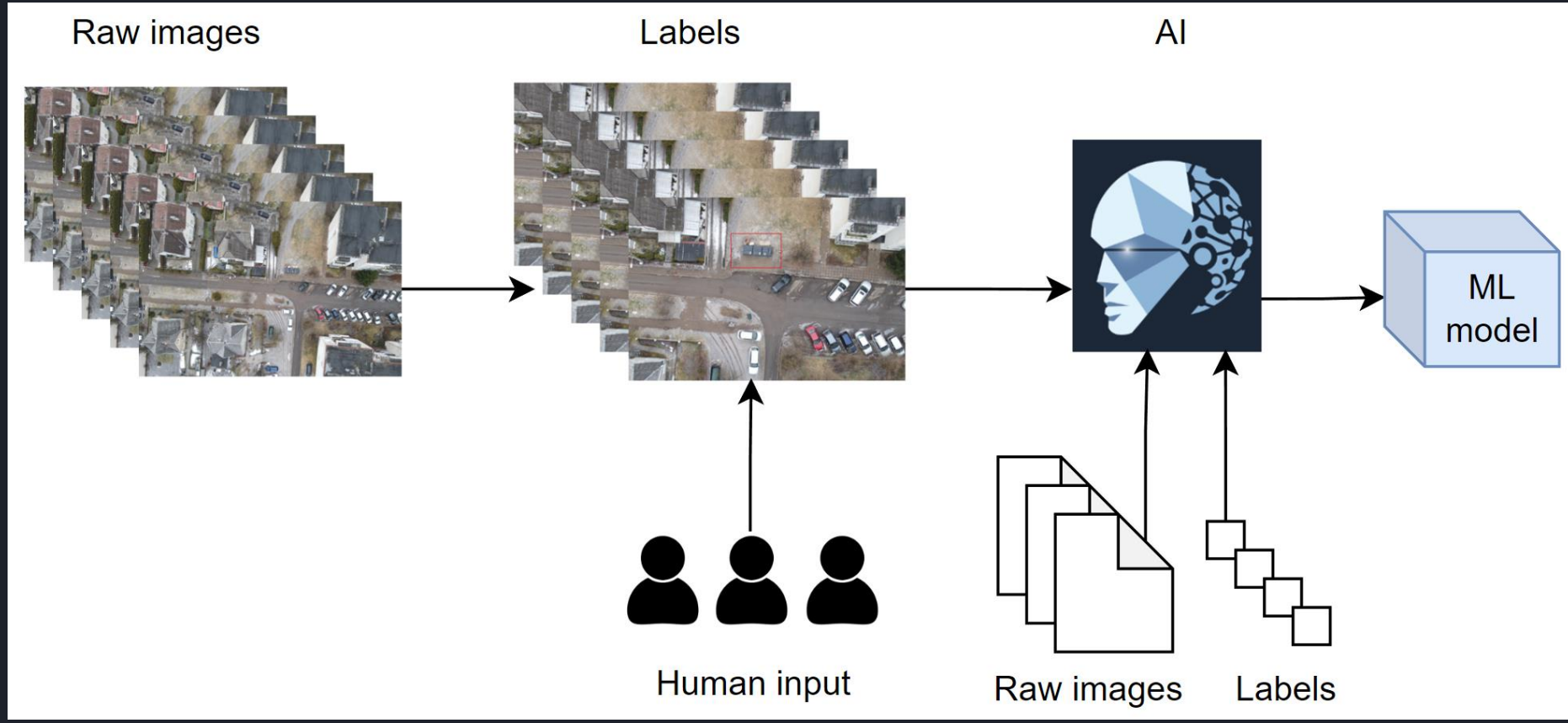


Photos from the sky

Data in our database

An example flight

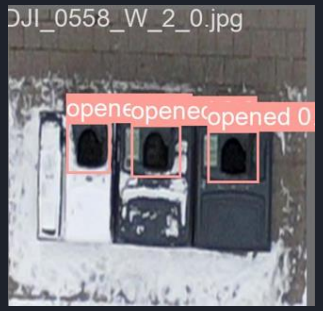
DATA-DRIVEN APPROACH

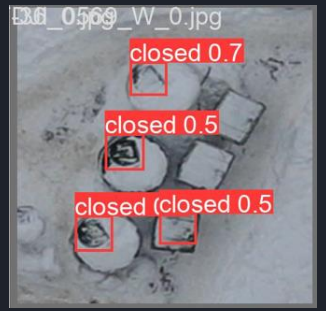


MODEL #1 – SPOTTING THE CONTAINERS

Computer vision in real-time

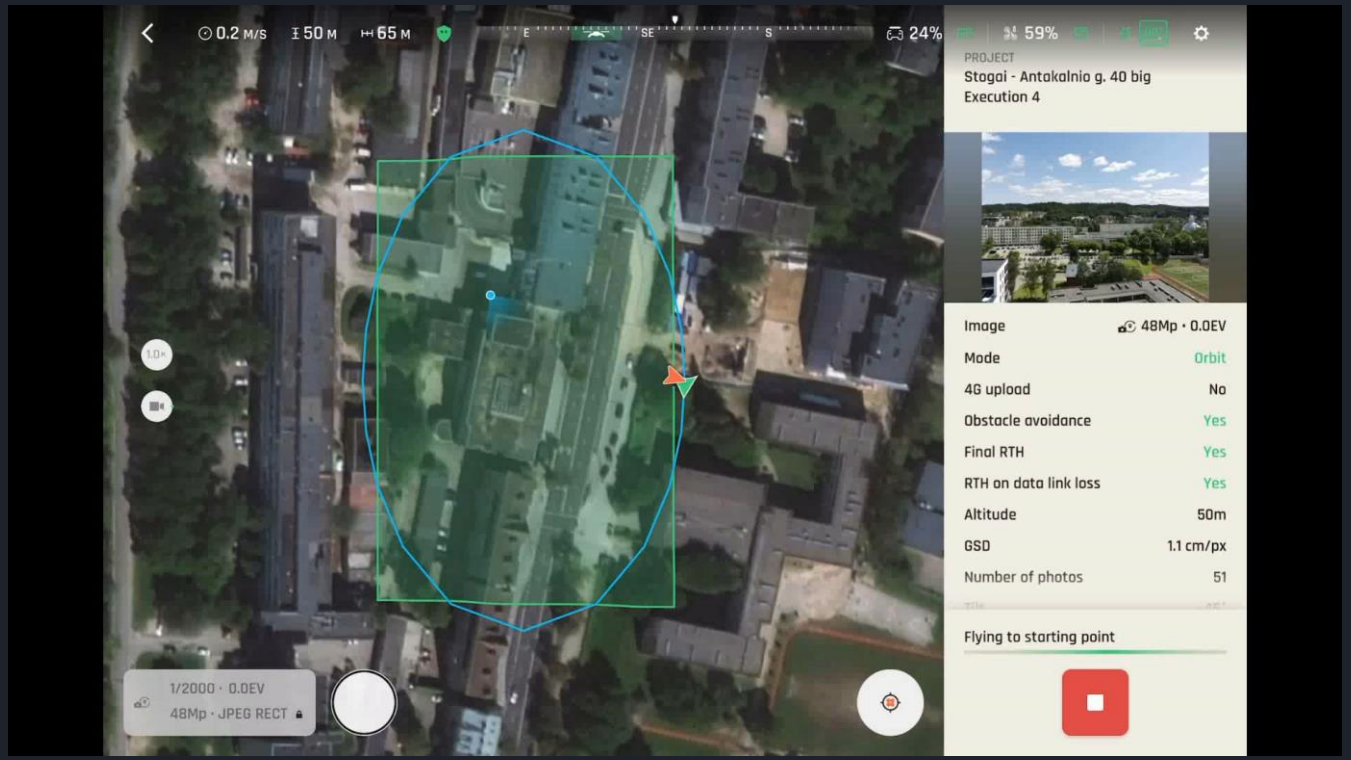
MODEL #2 – SPOTTING THE OPEN/CLOSED LIDS





MODEL #3 – WASTE TYPES AROUND THE CONTAINERS

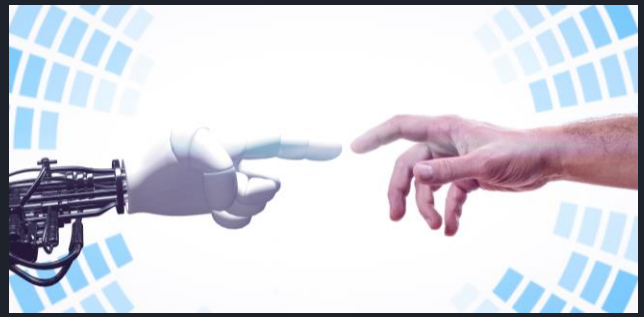
MODEL #4 - ROOF QUALITY DETECTION



User Experience

Benefits of AI

- Custom ML models can be shared across municipalities and even in other countries.
- More effective surveillance of various municipality services.
- More rapid response time in fixing issues.
- Cost savings by replacing tedious human labour with AI.
- Quality of life improvement for the citizens and guests of Vilnius.



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Thank you for listening!

Special thanks to:

Austėja Burmonaitė

Aurimas Paukštė

Rokas Petravičius

QUESTIONS?