MineGuard

A drone kit for remote mine detection with an accuracy of 90%, which is 3 times cheaper than analogues

PROBLEM

The manual process of searching for landmines is slow, dangerous and expensive

It will take Ukraine more than 750 years to demine all the affected areas using traditional methods

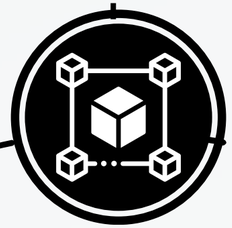
The estimated cost of demining Ukraine is about $37 billion

The estimated cost of demining the top 10 most mined countries is over $282 billion

SOLUTION

Drones

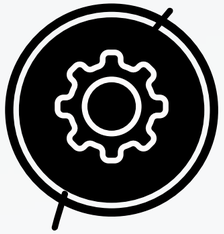
MineGuard KIT is used in conjunction with any drone



MineGuard KIT

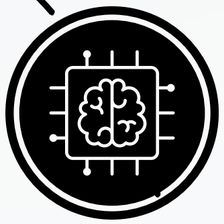
Three sensors

RGB camera, thermal imager and metal detector



Neural networks

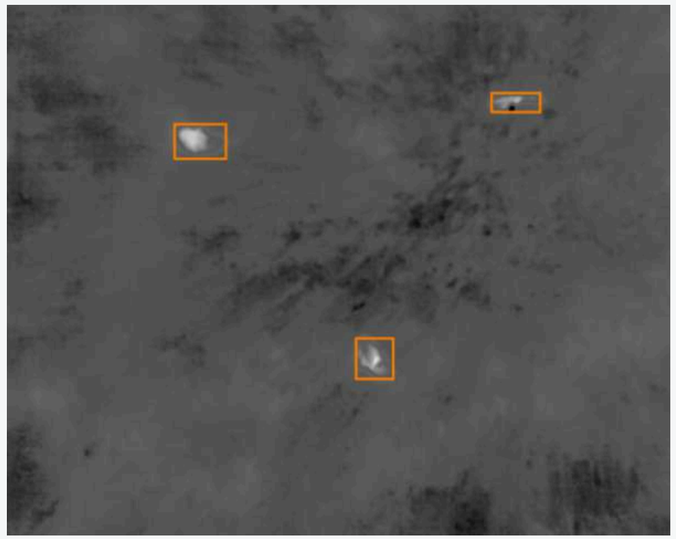
Computer vision technologies and neural networks for mine detection



TECHNICAL IMPLEMENTATION

RGB camera + YOLOv8

+

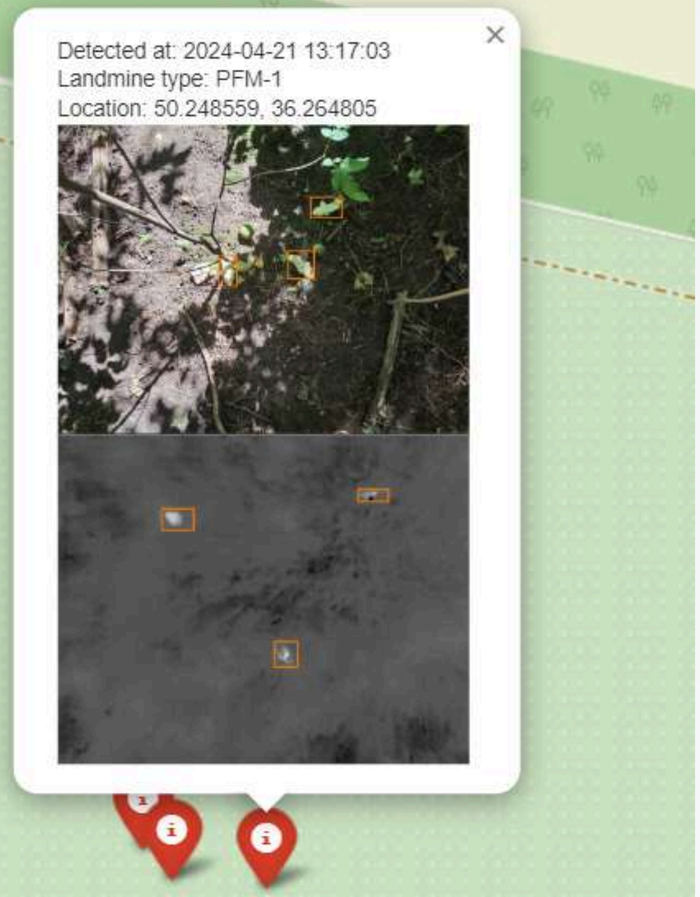


Thermal imager + YOLOv8

+

Neural network processing of metal detector signals

*** own unique datasets based on digital twins are used to train neural networks**



ALGORITHM

1. **Data processing:** 3 independent sensors scan the area.
2. **Visualization via map:**
    - Yellow marker: 1 sensor suspects a mine.
    - Red marker: 2+ sensors have detected a mine.
3. **Classification of mine type**

COMPETITIVES

	MineGuard	Skyfront	ST1	MagDrone R3	ArroTech
Accuracy	90%	90%	90%	30%	30%
Price	$12K	$47K	$30K	$17K	$150K
Sensors	RGB camera, thermal imager, metal detector	LiDAR	RGB camera, metal shaker	Magnetometer	Magnetometer

MARKET

Market value

$4k | **$12k**

KIT | KIT + Agrodron

Number of sales

>100

units

Production facilities

60

units/year

BUSINESS MODEL

- Primary: state mine action operators
- Secondary: commercial and grant-funded operators

COSTUMERS

- Development and improvement of KIT
- Staff salaries and wages
- Advertising and customer search costs

COST STRUCTURE

Sales of MineGuard KIT to mine action operators

REVENUE STREAMS

ACHIEVEMENTS

Крона Надії
Благодійна організація

yep!

MITS

SPARK
СТАРТАП-ЦЕНТР НТУ «ХПІ»

Sikorsky Challenge

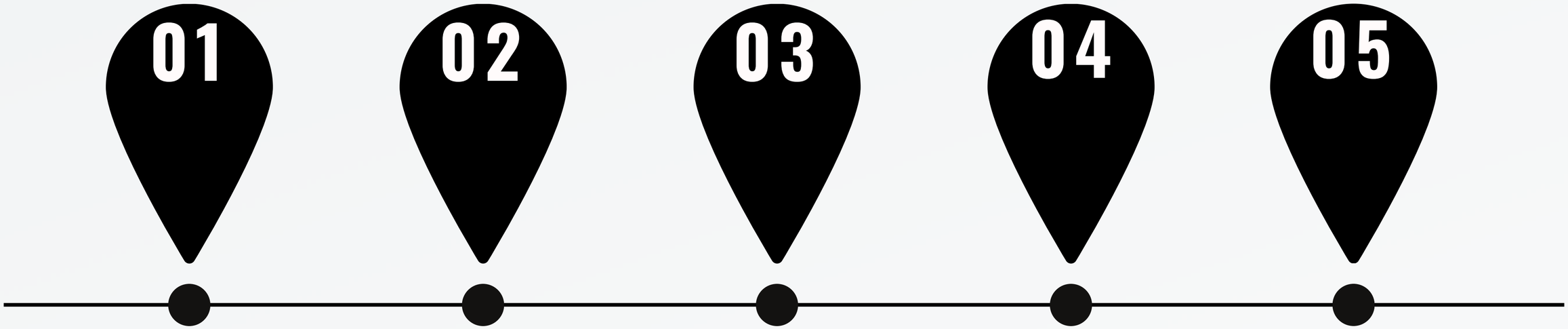
BRAVE1
UKRAINIAN DEFENSE INNOVATIONS

ACHIEVEMENTS

MineGuard KIT

Recording a dataset

ROADMAP



Q2 2024

Getting a grant from CIG R&D Lab, creating an MVP

Q3 2024

MVP testing at the SES training ground

Q4 2024

Active phase of improving the system and neural networks

Q1 2025

Conclusion of contracts for test operation

Q2 2025

First sales of MineGuard KIT

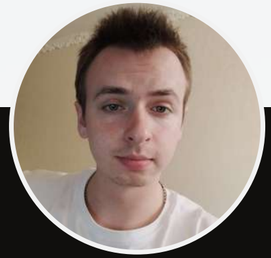
TEAM

Mark Himonov

CEO
Python Developer

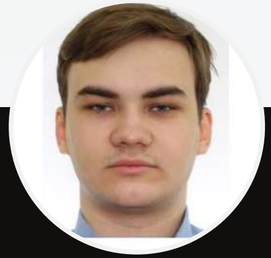
Illya Hovorukha

CTO
Engineer



Mykhailo Myronenko

Data Scientist



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Mentor

THANK YOU FOR YOUR ATTENTION