

YOLO Application on Portuguese Highways for Photovoltaic Energy Potential Evaluation

2nd Cycle Integrated Project in Engineering Physics 24/25

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Introduction



Find sustainable and clean energy solutions



Integrate photovoltaic panels in highways

YOLO

- Single-stage detection method;
- Real-time applications.

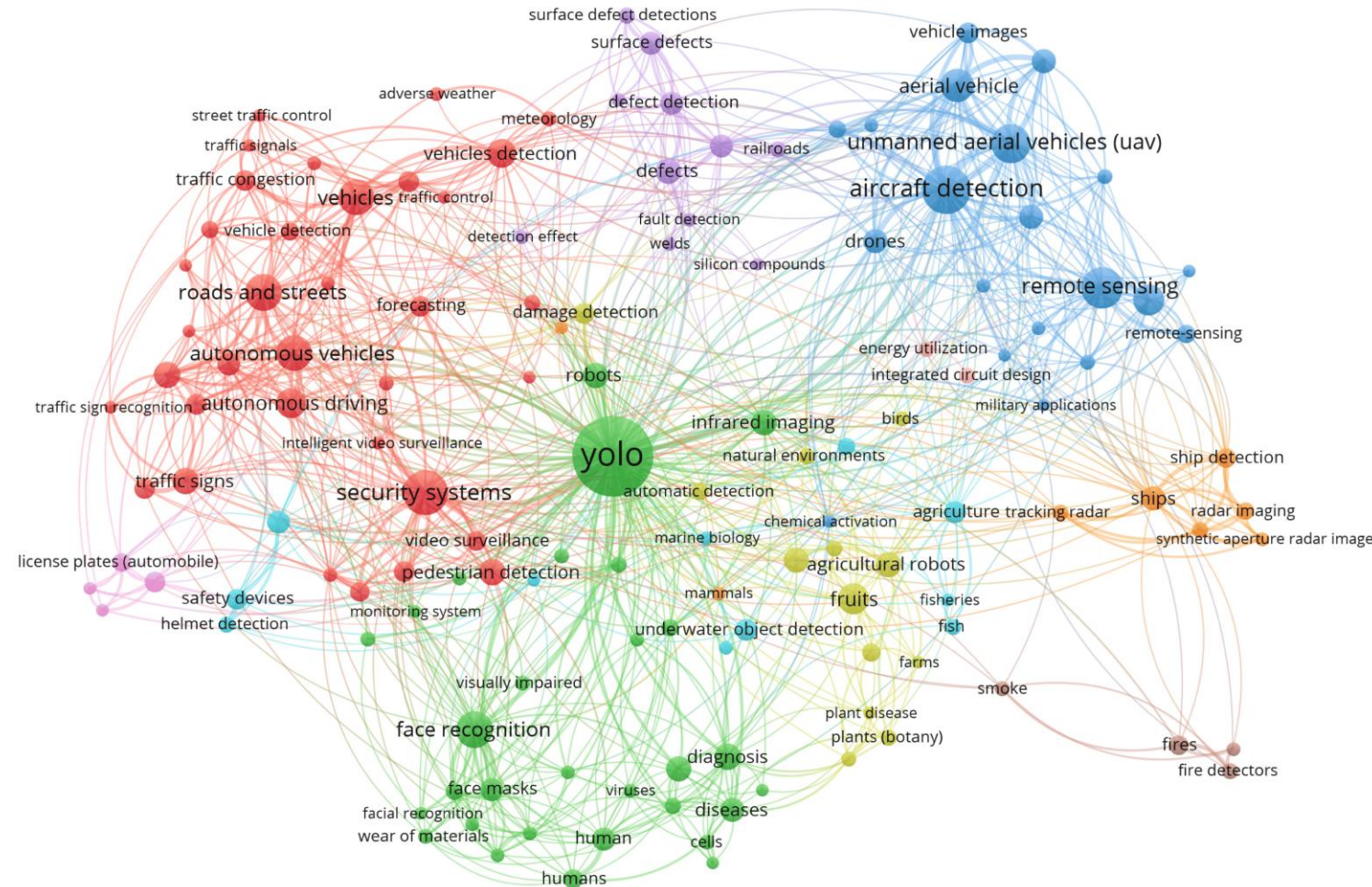


Fig.1: Bibliometric network visualization of the main YOLO Applications

Research Status

- Precision: 86%
- Recall: 89%
- mAP: 91%



Fig.2: Prediction result on Sound Barriers identification using YOLOv10n

Future Work

- Identify other highway structures;
- Access their potential for solar energy generation;
- Optimize the model.



Thank You!
