



Computer Vision for Marine Monitoring

Steve Vanlanduit, InViLab research group

Mantis shrimp



Lies Vansteenbrugge et al, Larval mantis shrimp
Rissoides desmaresti (Risso, 1816) in the Belgian
part of the North Sea, Belg. J. Zool., 142 (2) , 2021.



**Example
projects**

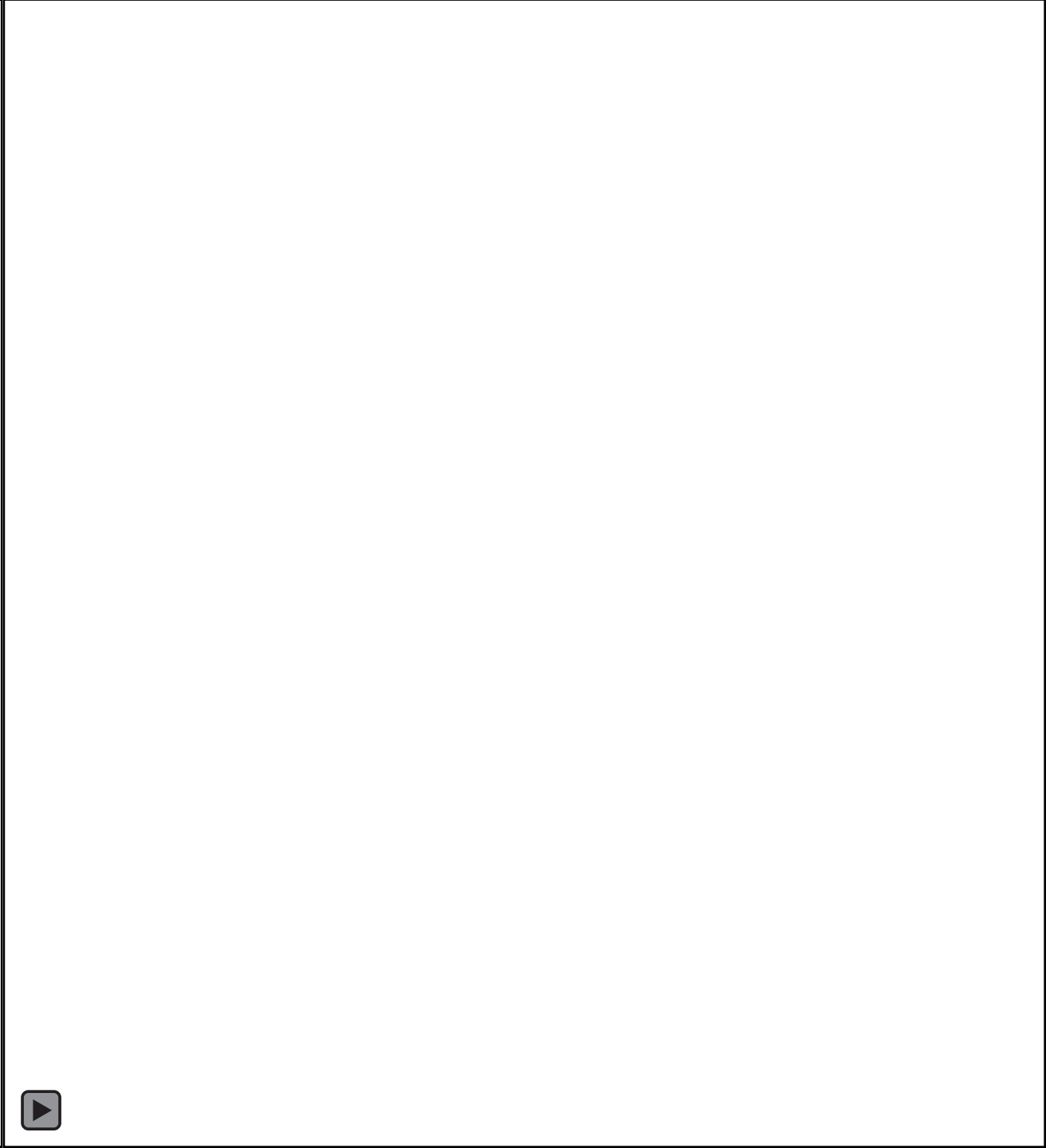
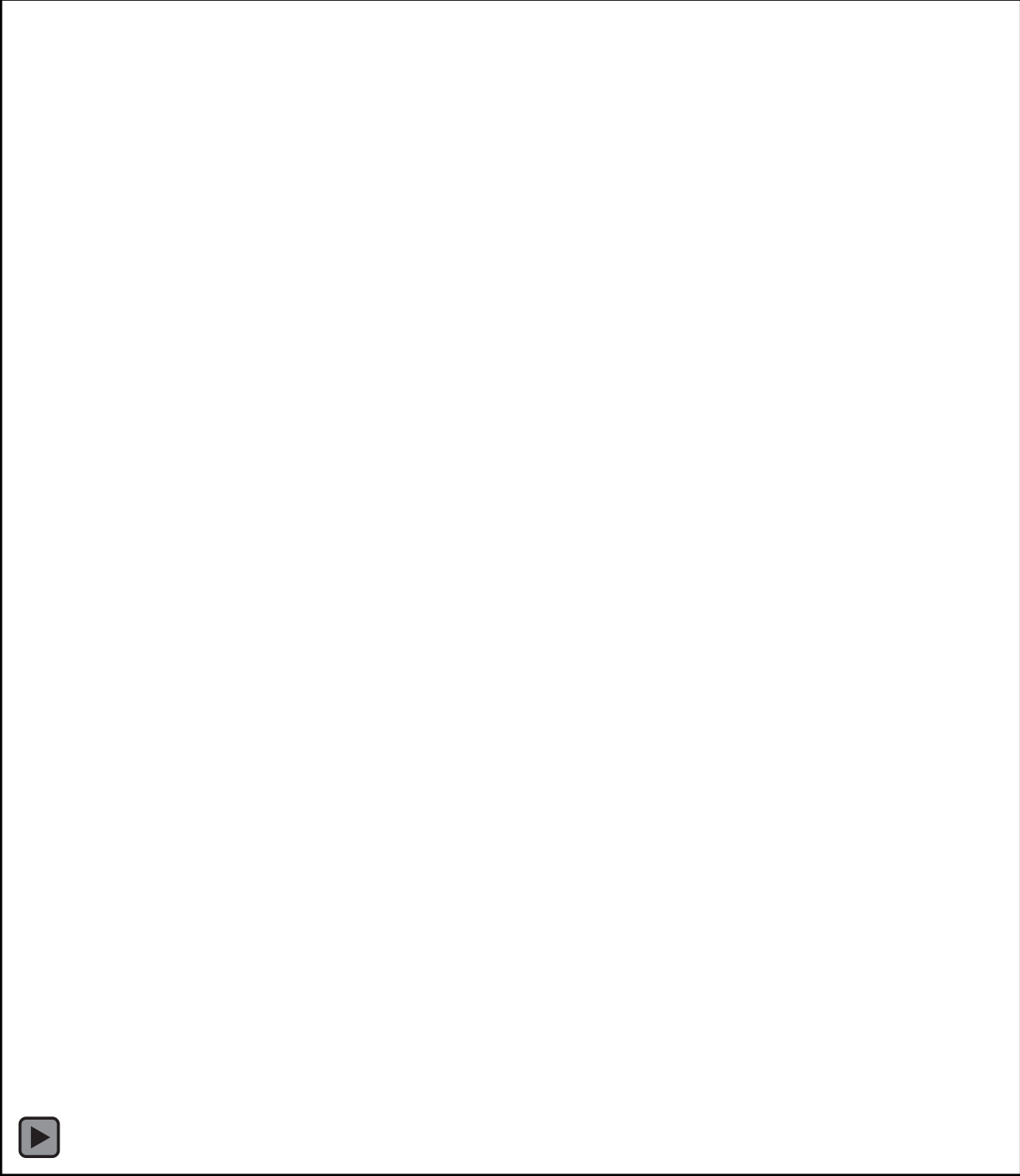


**Technological
challenges**



**Future
applications**





Underwater: seaweed growth monitoring



ICT Agrifood project Utopia.
2022-2024. Partners: Aqitec,
I-AM, BU Univ., Wageningen Univ.,
Uantwerpen. <https://utopia-project.eu/>



On the water: data driven autonomous shipping

Thermal camera's for ship detection and tracking

Blue Cluster cSBO project DDShip, 2024-2026. Partners: Flanders Hydraulics, Ghent University, University of Antwerp

Hazy images due environment

→ Image processing or advanced cameras

Sufficient AI training data

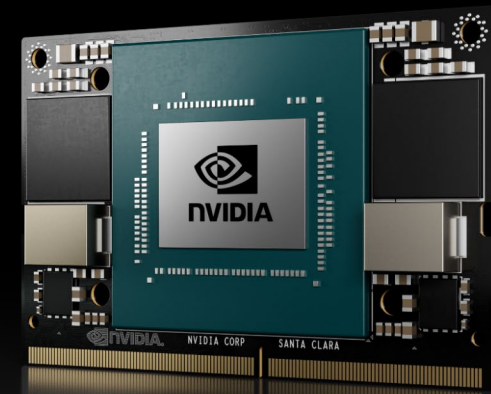
→ Use simulated images

Which camera typ to select?

→ Multi-camera lab setup

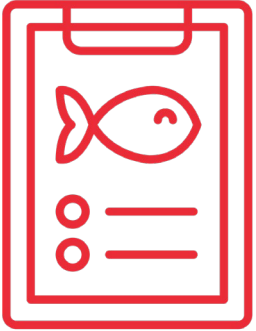
CHALLENGES

High computational cost



→ Use edge computing

Vision for the future: possible collaborations



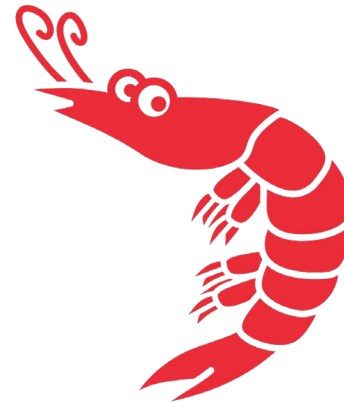
**Marine biologists:
inspection of
maritime ecosystems**



**Military: security
of maritime
infrastructure**



**Offshore operators:
inspections and
safety of workers**



**Sea farmers:
monitoring of
aqua culture**

Towards the capabilities of the Mantis shrimp

