Introspectrone: Autonomous Inspection in Remote, Confined and Dark Environments – Evangelos Boukas

Outdoors is better for autonomous drones due to GLSS

Indoors you have to rely on sensors and this Is very challenging.

Main challenges:

* Perception using own devices
* Generalizable Machine learning
* Challenging environment to navigate in
* Fully autonomy (Plan – replan, Failsafe operation)

Inspectrone

Autonomous and high-level command system for remote inspection of marine vessels to support classification and commercial operations.

Pain and Need

Structural defects cost:

* Delays
* Repairs
* Loss of opportunity
* Above all risk for human life

Absolute Localisation v1

**Questions**

Is the drone open source? Does it use off the shelf components?

How does the robot know it has explored an area? In the demo we could see some areas were not fully explored, is there a way for the drone to know this and report this?

are there any opportunities for us to get involved in this project? – yes but it is finishing in last months.

Is this a public project that anyone can reproduce?

Are the resources used available for anyone to see?

Could the robot detect the wrong hole, i.e. if a person is wearing a t-shirt with a picture of a hole?

Navigate and Interact Autonomously

Behaviour tree used to control the drone -