

RAVEN NEST

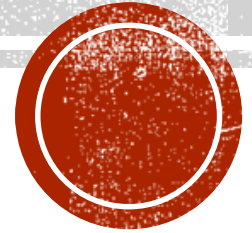
SYMBIOTIC ROBOT SYSTEMS FOR PATH FINDING&MAPPING

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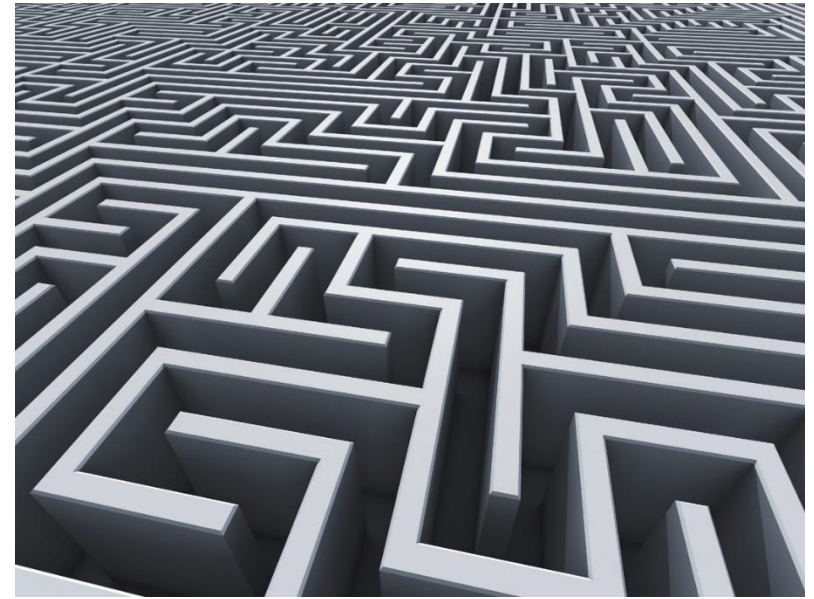
OUTLINE

- Problem Definition
- Motivation
- The Road So Far
- Future Works



WHAT ARE WE DOING ?

- Creating a multi-robot system for 3 different scenarios
 - Solving a maze with known size
 - Solving a maze with unknown size and location
 - Mapping of a region



PROBLEM DEFINITION

- Limited Flight Range & Charge Capacity
- AR Drone 2.0



- Limited Mobility
- P3DX – Ground Robot



MOTIVATION

- Our Solution
 - Creating a multi-robot system
 - Maximazing efficiency by using both UGV's and UAV's
 - Solution for all weak sides



CHALLENGING PARTS

- Flying AR Drone
 - Not Stable
 - Not Usable in Every Condition



THE ROAD SO FAR

- ROS & Packages
 - Common Framework for robotics
 - Packages for AR Drone
- A Simple Auto-Pilot
 - Our own Auto-Pilot implementation
 - Checking for correct route
- A Simple Mission Simulation
 - Mission Simulation on Tum Simulator



FUTURE WORKS

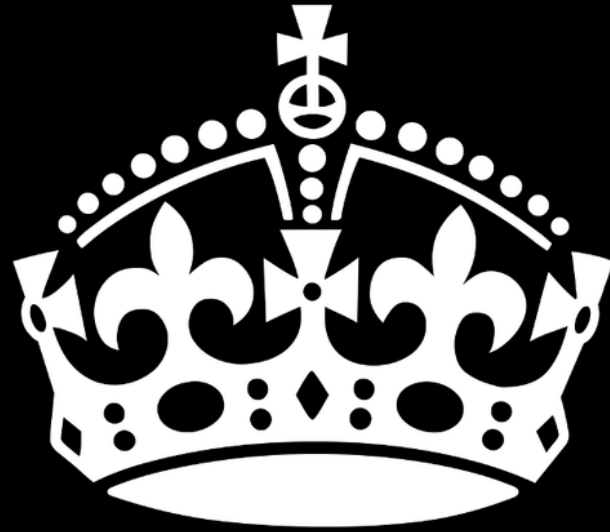
- Better Auto-Pilot
- Simulation on Unity
- AI and CV algorithms
- Implementing Scenarios



REFERENCES

- [1] <http://www.ros.org/>
- [2] https://github.com/AutonomyLab/ardrone_autonomy
- [3] https://github.com/mikehamer/ardrone_tutorials
- [4] https://github.com/occomco/tum_simulator





THANK YOU
FOR
your
ATTENTION!
ANY QUESTIONS?