Sydney/Australia

Robocup 2019

HELLO!

Welcome to
Robocup 2019
Sydney | Australia
MRL-RSL

Overview

➢ Previous Works

➢ Building Detector

Previous Works

➢ Path planning

➢ Clustering

➢ Communication

➢ Search

➢ Road Detector

➢ Human Detector

Path Planning and Clustering

We use A* algorithms for Path planning and K-means algorithms for clustering.
We implemented Hungarian algorithms for assign agents.
This year we use the same algorithms for these kinds of modules.

Communication

We use sample communication.

Search

- ➢ Simple Search
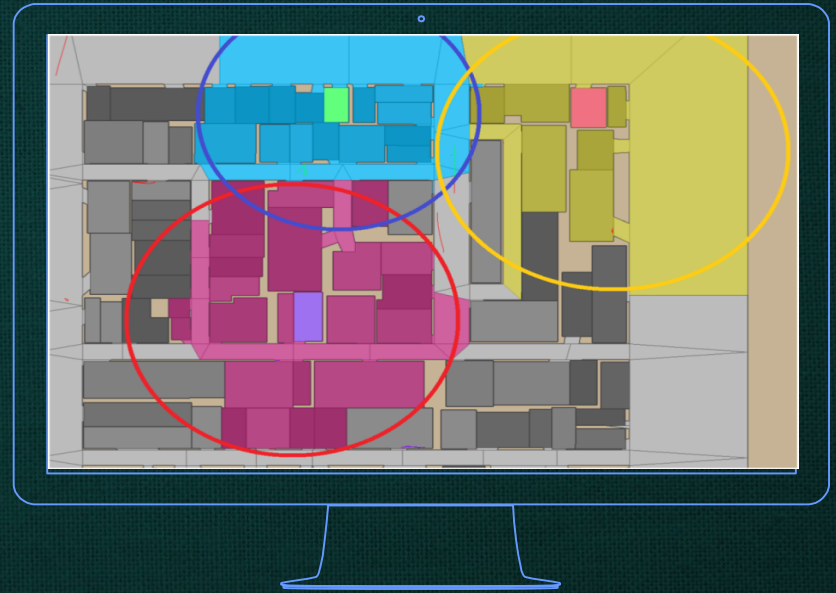- ➢ Civilian Search
- ➢ Fire Search

Search

> Civilian Search

Search
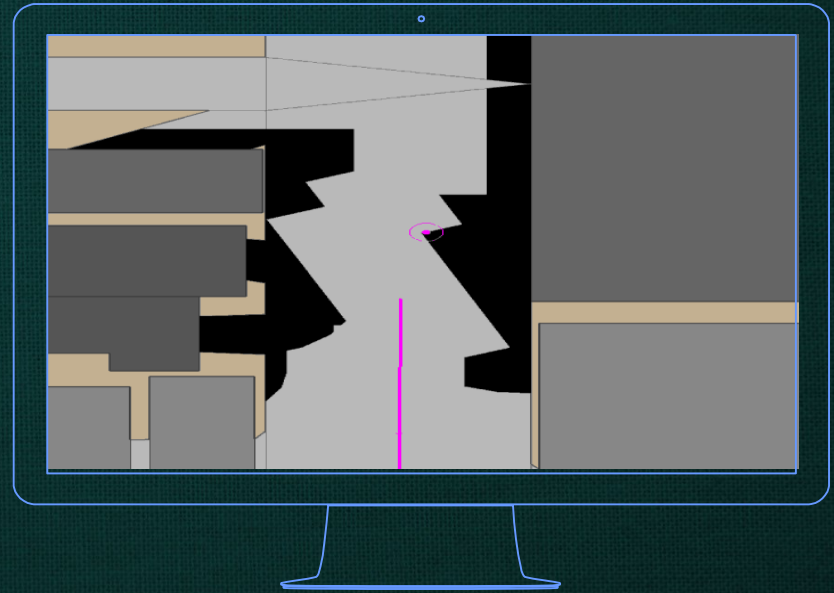
> Fire Search

- Maximal Covering Problem

Road Detector

➢ Guidline strategy

Human Detector

➤ Coordination

➤ Calculation
  ● Rescue Time

$$RescueTime(vi) = \begin{cases} m = 1 & buriedness(vi) + \beta \\ m > 1 & \dfrac{buriedness(vi)}{m} + \beta \end{cases}$$
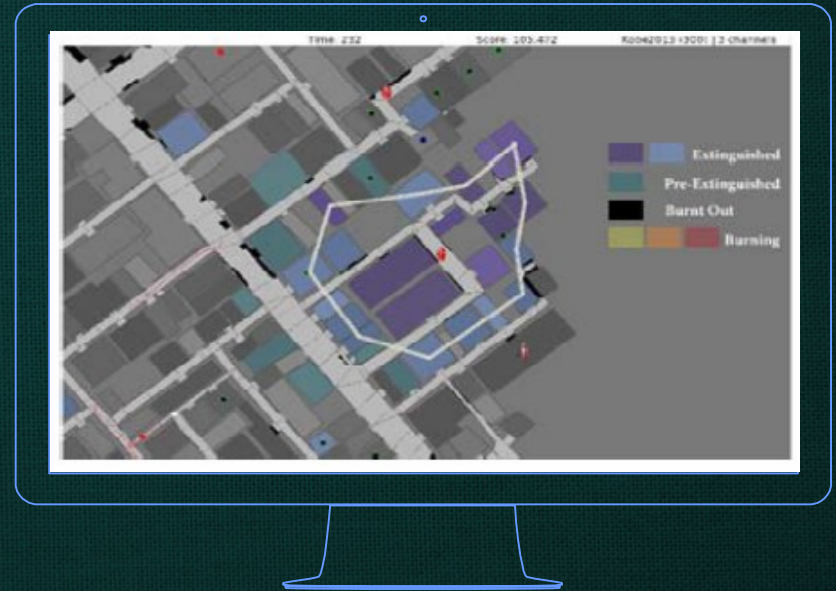
Human Detector

➢ PossibilityOfRescue

$$PossibilityOfRsc(v_j) = \frac{earlyComplete(v_j)}{deathTime(v_j)} < 1$$

➢ EarlyComplete

$$earlyComplete(v_j) = RscTime(v_0) + \sum_{i=1}^{n} RscTime(v_i)$$

➢ Priority

$$priority(v_j) = \frac{earlyComplete(v_j)}{deathTime(v_j)} > \delta$$
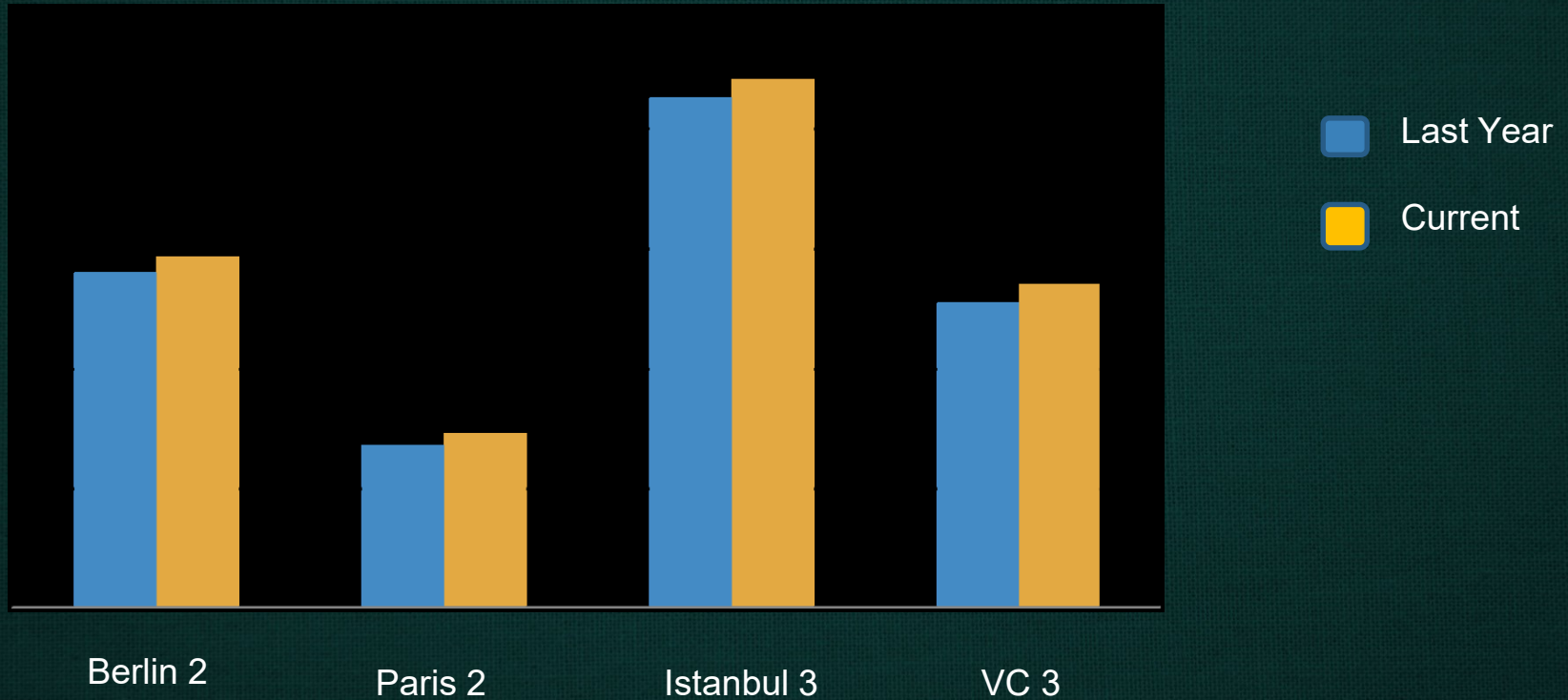
Building Detector

➤ Pre-Extinguish

Building Detector

➤ **Find all fire zone**

Results

THANKS!

Any questions?

You can find we at :

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