Robots to the rescue

Simulation as a means of R&D

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July 30th @ McGill University

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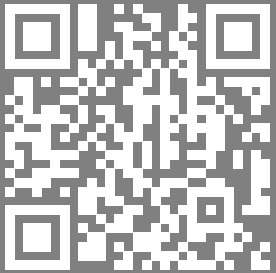
RoboCup Rescue Simulation

https://rescuesim.robocup.org/



Since 2001.

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Objective

- Gain understanding on disaster relief
- Identify and solve underlying problems
- Develop and share implemented algorithms
- Transfer the findings to practice

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Elements of the challenge

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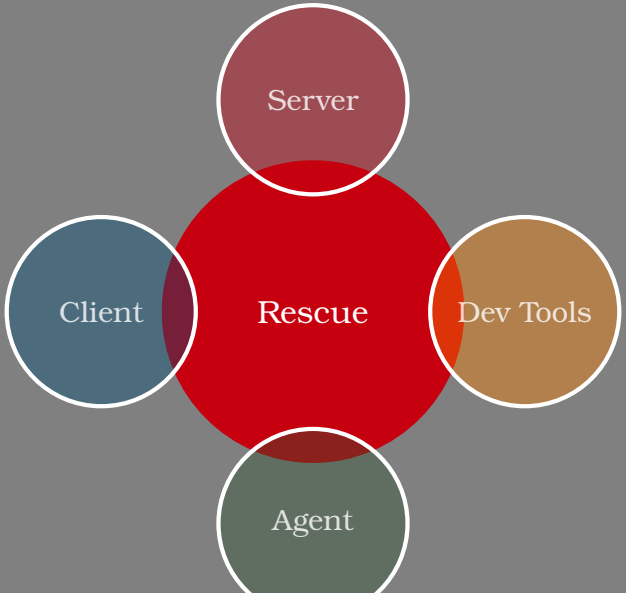
Open source: Python, Java, Linux, Bash, GitHub



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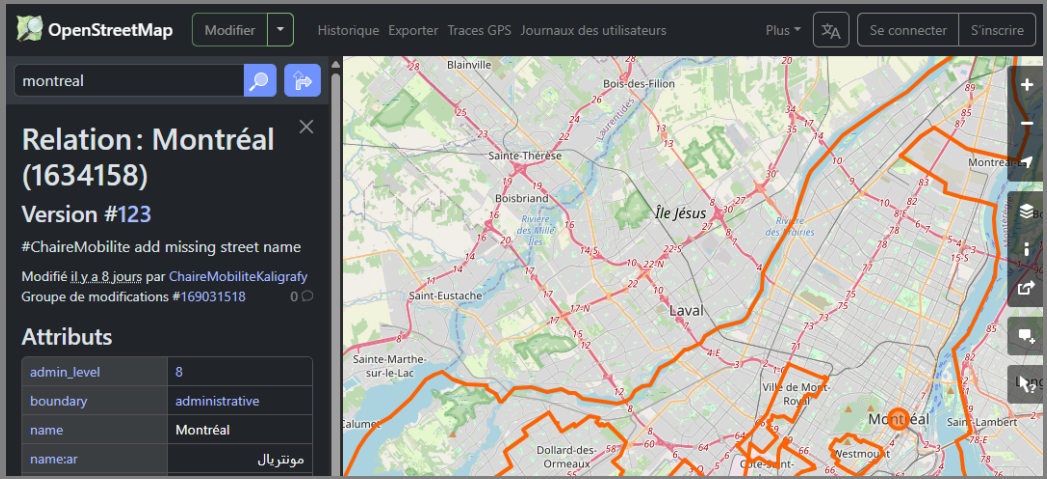
Maps

OSM
OpenStreetMap
GML
Geographic Markup Language
JOSM
Java OpenStreetMap Editor
osm2gml
RCRS converter script



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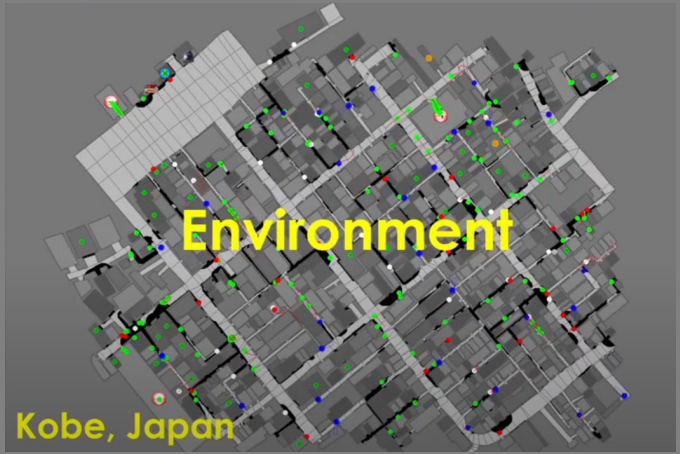
Scenario



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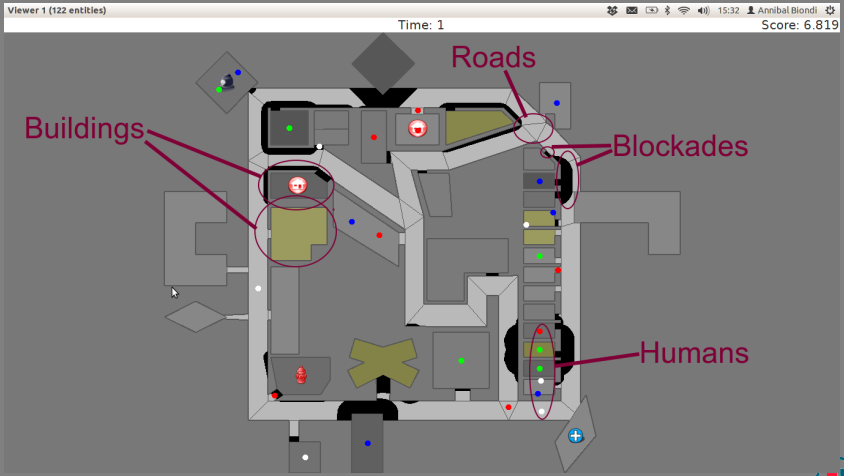
Elements



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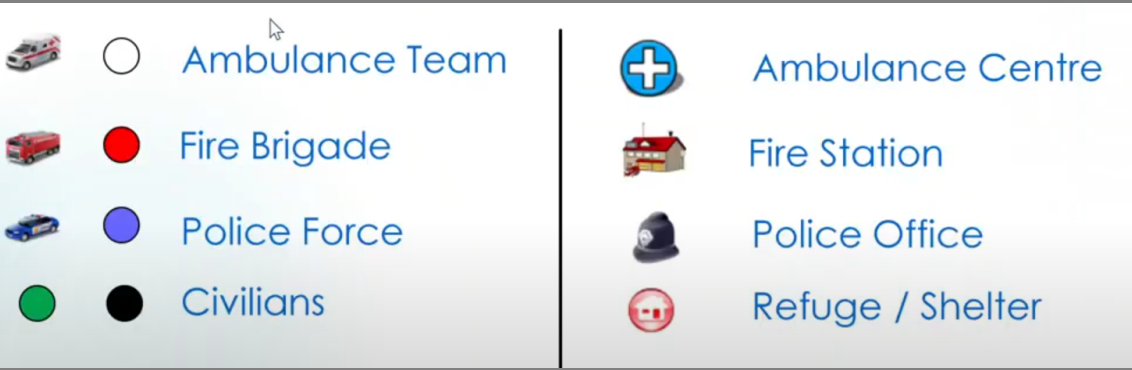
Elements



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What kind of math does this require?

Sometimes it is simple *geometry*.

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What kind of math does this require?

Sometimes it is more elaborate *geometry*.

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What kind of coding does this require?

```
1  def think(self, time\_step, change\_set, heard):
2
3    self.send_say(time\_step, ...) # talk
4
5    self.send_speak(time\_step, ...) # use a radio
6
7    self.send_rescue(time\_step, ...) # send help to identified target
8
9    self.send_move(time\_step, ...) # move to a new location
0
1    self.send_rest(time\_step) # stay in place
```

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What kind of math does this require?

Sometimes it is also *linear algebra*.

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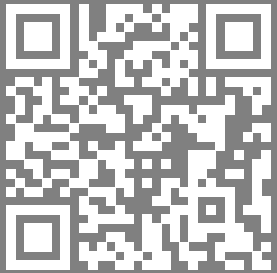
Gracias / Thank you / Merci / Kiitos

Stay in touch



(That's my website.)

(and let me know when you win the competition)

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