

# Robots to the rescue

## Simulation as a means of R&D

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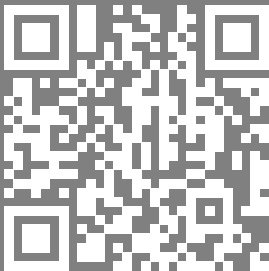
July 30th @ McGill University



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# RoboCup Rescue Simulation

<https://rescuesim.robocup.org/>



Since 2001.



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# Objective

Analyze

Model

Solve

Share

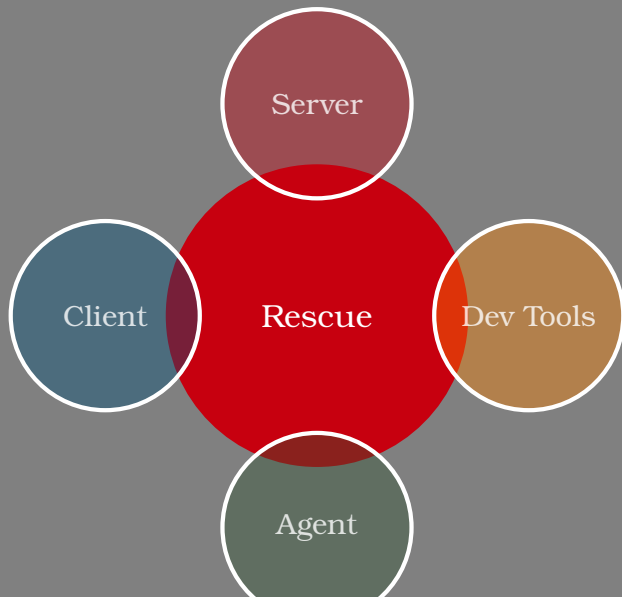
- Gain understanding on disaster relief
- Identify and solve underlying problems
- Develop and share implemented algorithms
- Transfer the findings to practice



# Elements of the challenge



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



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# Maps





OpenStreetMap

Modifier



Historique

Exporter

Traces GPS

Journaux des utilisateurs

Plus



Se connecter

S'inscrire

montreal



## Relation: Montréal (1634158)

Version #123

#ChaireMobilite add missing street name

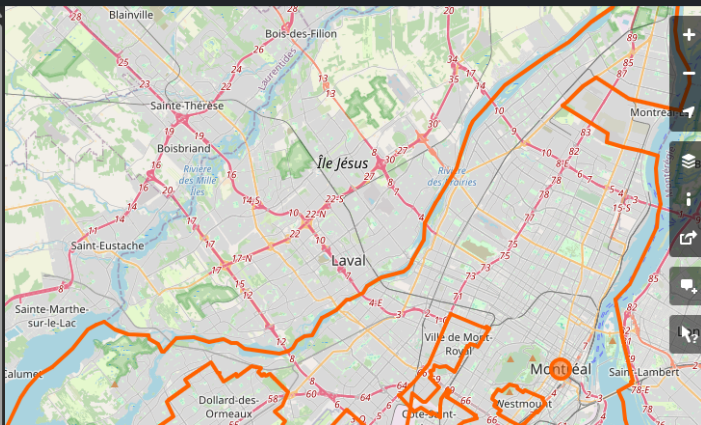
Modifié il y a 8 jours par ChaireMobiliteKaligrafy

Groupe de modifications #169031518

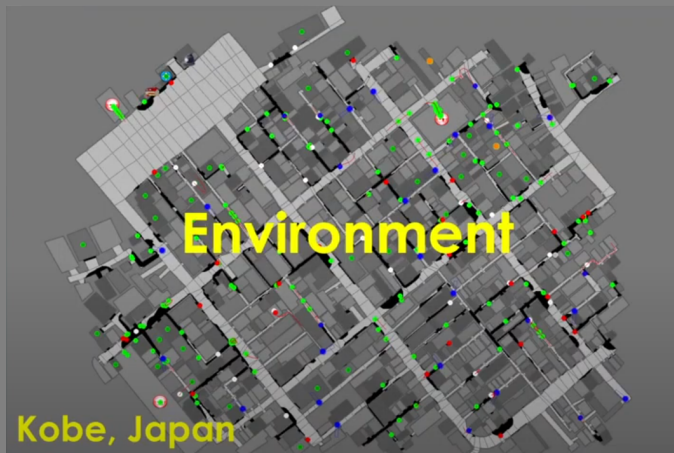


### Attributs

admin_level	8
boundary	administrative
name	Montréal
name:ar	مونترéal

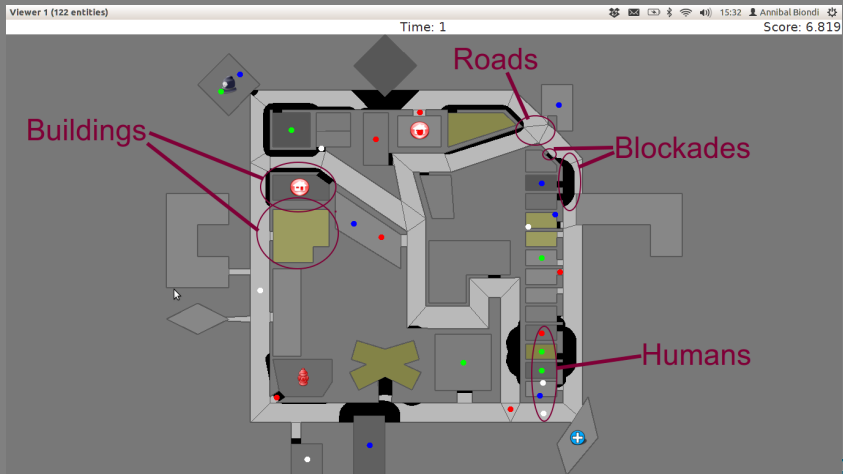


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# Elements



# Elements



Ambulance Team



Fire Brigade



Police Force



Civilians



Ambulance Centre



Fire Station



Police Office

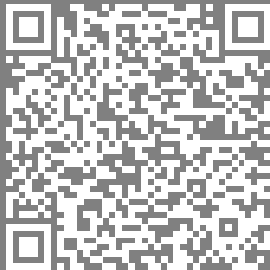


Refuge / Shelter



# What kind of math does this require?

Sometimes it is simple *geometry*.



# What kind of math does this require?

Sometimes it is more elaborate  
*geometry.*



# 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
```



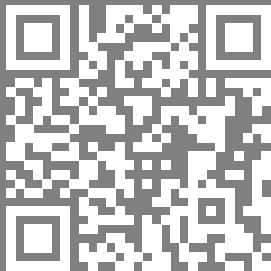
# What kind of math does this require?

Sometimes it is also *linear algebra*.



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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