

# **Development of a reactive agent for a simulated robot that solves labyrinths**

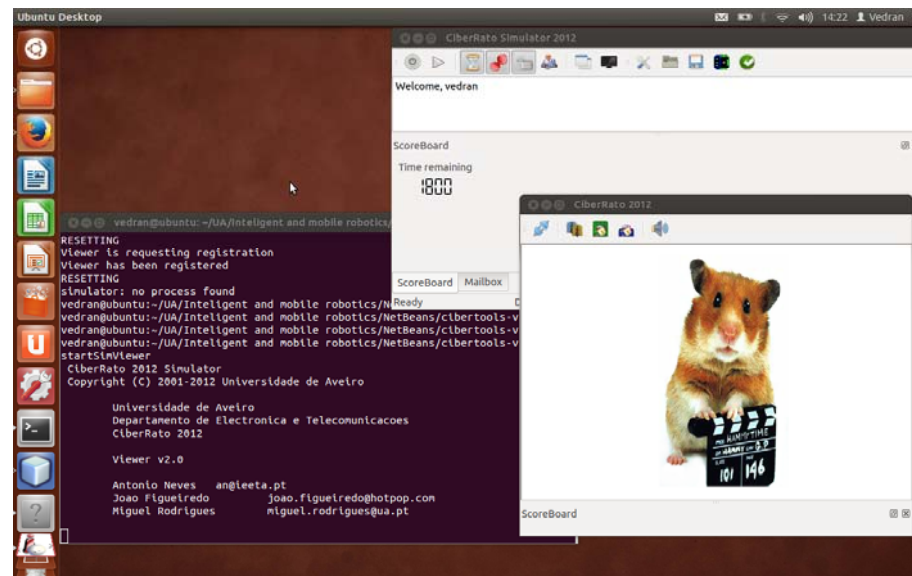
Intelligent and Mobile Robotics - 1<sup>st</sup> project

Vedran Semenski, Aveiro, October 2014.

# Intro

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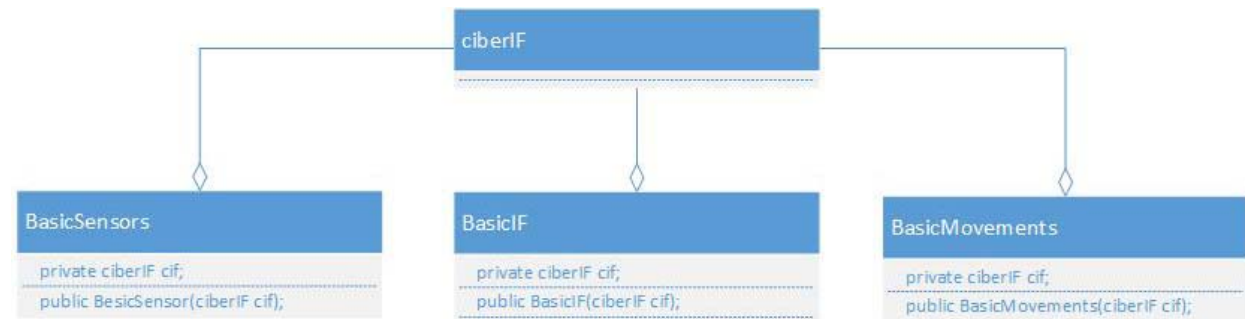
- ▶ Java
- ▶ NetBeans
- ▶ Simulator
- ▶ CiberIF



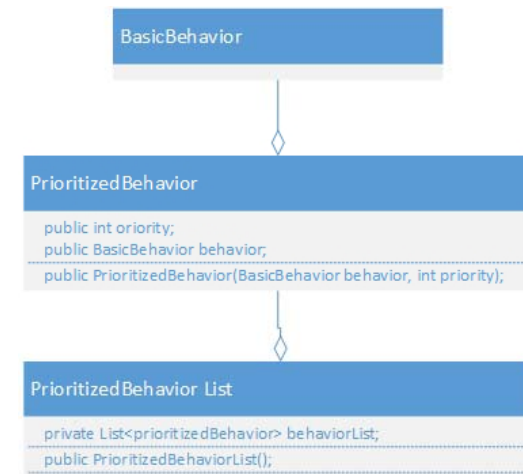
# Basic concept

## ► Abstracting the CiberIF

1. Movements
2. Sensors
3. Interface



- ## ► Robotic Agent (Factory)
- ## ► Subsumption Architecture
- Prioritized list of behaviors
- ## ► Behaviors



# Behaviors

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1. Avoid colision
2. Finish
3. Follow the beacon
4. Follow beacons approximate location
5. Follow the wall
6. Wander

# Behaviors

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# Workflow

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## ► BasicWorkflow:

1. Main function creates an Agent using AgentFactory
2. Initialisation
3. Start loop
  1. Refreshing sensor readings
  2. Testing behaviors
  3. Execution of behavior with highest priority
  4. Check if the agent finished
4. End

# Conclusion

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## Advantages:

- ▶ Simple
- ▶ Good results
- ▶ Flexible
- ▶ Fast

## Limitations

- ▶ Set and forget
  - ▶ learning
  - ▶ adaptability
- ▶ Limited improvement options