

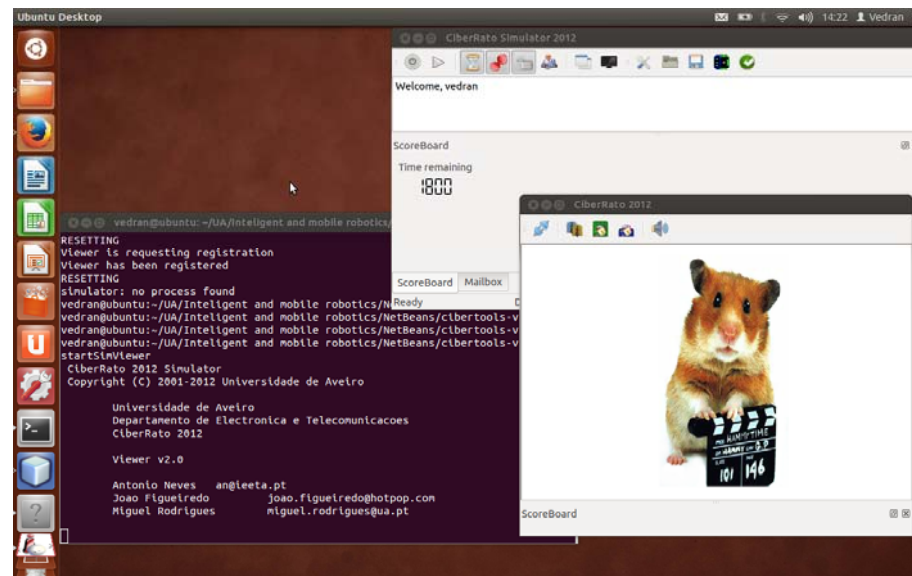
Development of a reactive agent for a simulated robot that solves labyrinths

Intelligent and Mobile Robotics - 1st project

Vedran Semenski, Aveiro, October 2014.

Intro

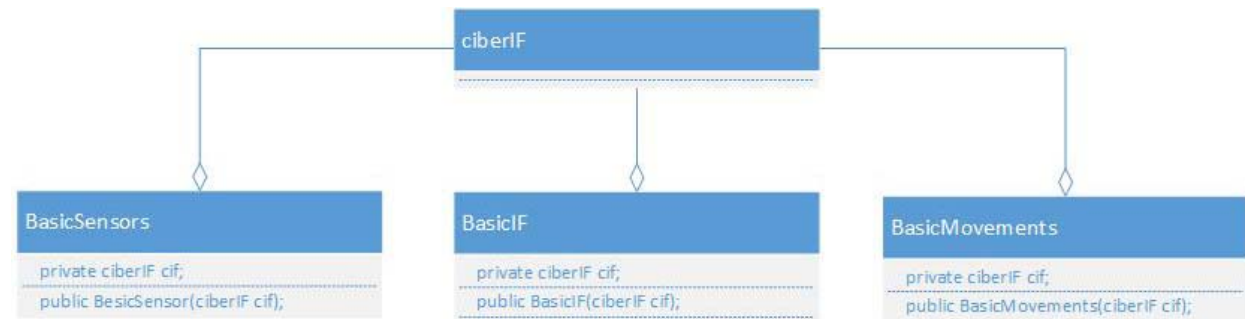
- ▶ Java
- ▶ NetBeans
- ▶ Simulator
- ▶ CiberIF



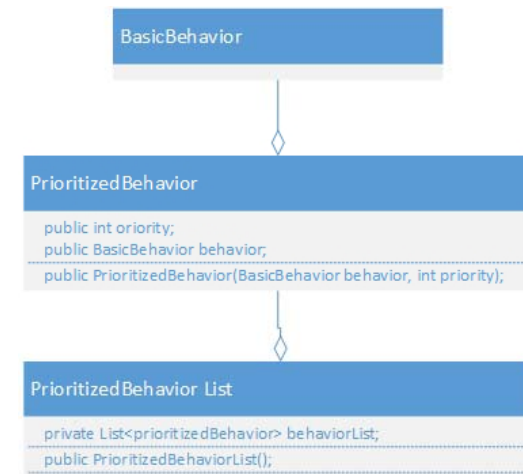
Basic concept

► Abstracting the CiberIF

1. Movements
2. Sensors
3. Interface



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



Behaviors

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

Behaviors



Workflow

► 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

Advantages:

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

Limitations

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