

Extending ARGoS and TAM with Python

Alberto Parravicini

Université libre de Bruxelles, PROJ-H-402

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A brief introduction...

ARGoS: a simulator for swarm robotics.

It can be extended with plugins and modules.

Here, 2 new extensions:

- A **Python wrapper**.
- A Python implementation of **TAM** for ARGoS.

Goal: simplify the user's work.

Simulations in ARGoS

A simulation has 3 components:

- A **configuration** file: to specify the entities.
- A **loop function**: customize events at the start/end of each step.
- **Controllers**: program the behaviour of robots.

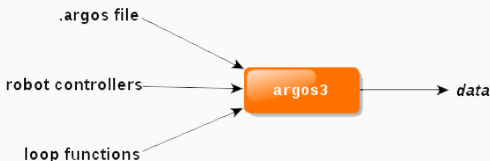


Image from http://www.argos-sim.info/user_manual.php

Python wrapper for ARGoS

To program a controller, there are 2 choices:

- **C++**: powerful, fast, but hard to use.
- **Lua**: simple, but not well known language.

A third choice:

- **Python**: simple, and very common!

Python wrapper for ARGoS

Main idea: write a Python wrapper taking inspiration from Lua.

- Written using **Boost.Python**
- Full support for generic actuators & sensors, **Footbot** and **e-puck**
- Same syntax as the Lua wrapper

TAM is a device used for task abstractions.

Originally, **Java** + **C++** interface to ARGoS.

Now partially rewritten in **Python**, with a modified **C++** interface.

PRO: simpler code-base, and controllers writable in Python.

THANK YOU!