A software toolset for quick humanoid motion prototyping

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Mobile robots

Mobile robots player/stage is used by many research groups

Humanoid robots

Many powerful simulators and related projects available
• SimSpark
• USARSim
• Gazebo
• Simbad

Many researchers directly use physical simulation libraries (e.g. ODE)

No time to learn how to use complex software

None imposes over the others

Often researchers need
• fast prototyping
• ability to understand and modify the code to meet specific needs

Much time wasted in implementing similar things

Realize a software toolset for humanoid motion development fully understandable in limited time

Features

communication through text messages over TCP/IP

Same interfaces for the real and simulated robot

Gtkmm motion development interface

storage as simple text files

Fast kinematic chain modeling using XML files

Motor rotate(double*), setPower(bool*)

Multi-robot simulation

Easily customizable environment

simulation of robot sensors (camera, touch)

Examples of usage


• Programming of CPGs by touch F. Dalla Libera, T. Minato, H. Ishiguro and E. Menegatti, Direct Programming of a Central Pattern Generator for Periodic Motions by Touching, RAS, Special Issue on Advances in Autonomous Robots for Service and Entertainment, 2009

• JEAP RoboCup team