Master's thesis

Simulation of complex actuators

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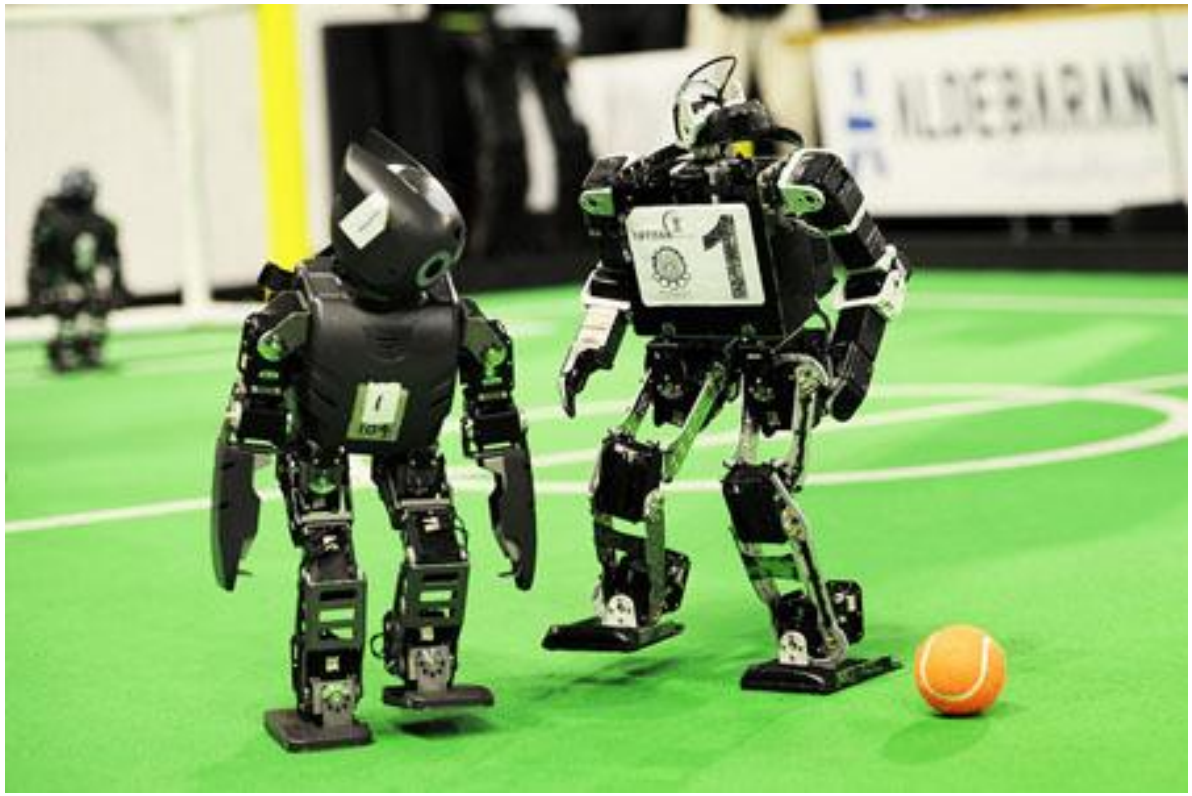
Context & Motivation

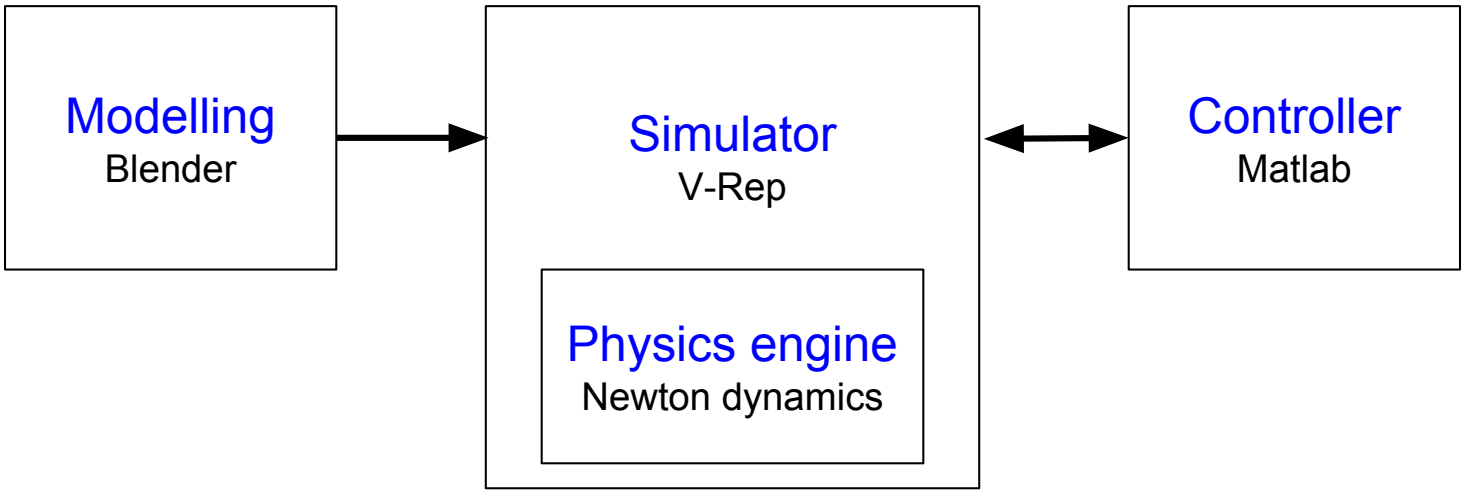


Problem statement

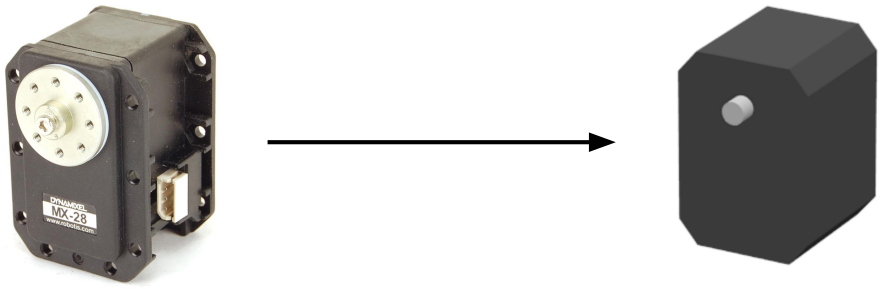
Required simulation features:

- realistic rigid bodies physics simulation
- the model of the robot should be able to interpret the same instructions that the real robot will
- the model of the robot should receive instructions at a relatively high frequency

Software choices



Modelling (1/2)



Problems :

- mass
- inertia
- volume
- function

Modelling (2/2)

Blender :

- volume

V-Rep :

- mass
- inertia
- function

Control (1/2)

Problems :

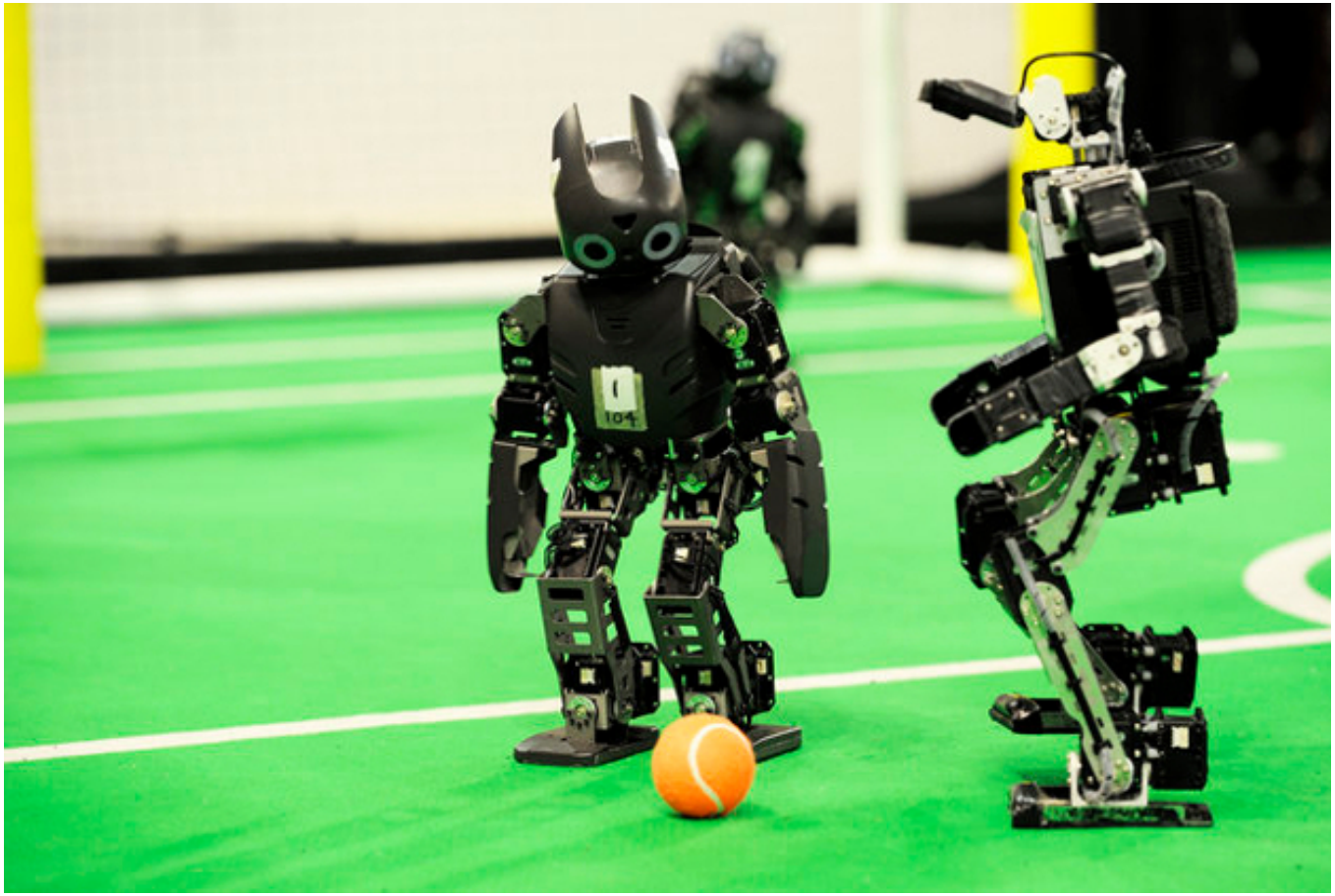
- Same orders as real robot
- High frequency

Control (2/2)

Solutions :

- Remote control through TCP socket
- Synchronous operation

Applications (1/2)



Applications (2/2)