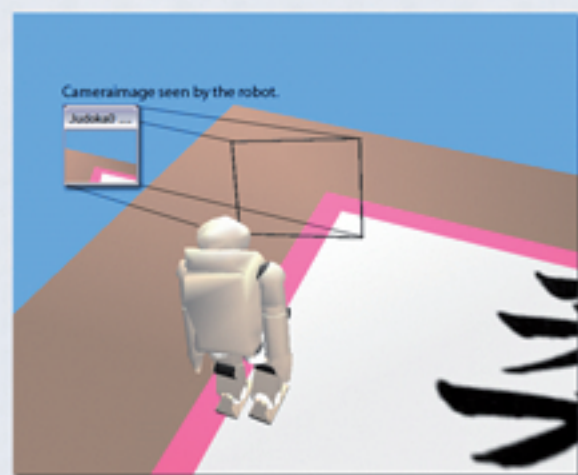
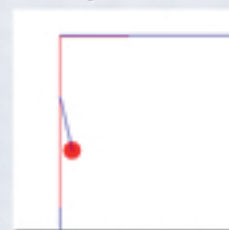


Bob II

Defensive style



The defensive style is best summarized in the african saying "Better flee than badly fence". It simply tries to avoid the opponent for the entire match (2 minutes) by walking on the edge of the tatami. The first version was developed in our editor, and was good at walking forward, but had some problems turning without falling. Hours and hours in the genetic algorithm has given us a quite safe walkstyle that reminds of the way a human walks and turns. The key here is stability, since a fall often means instant loss.



This map is inferred from the cameraimage above in addition with inclinometers and compass.

Navigation by imageanalysis is made difficult by the fact that the robot is swinging from side to side while walking. By using compass and inclinometers in addition to the imageanalysis, the robot can compensate for this. Given that the robot sees a corner it can localize itself with very good precision.

Offensive style

The offensive style was initially created as a sparring partner to our defensive robot, which in turn was developed to avoid the unbeatable ToddlerInSnowsuit. It later turned out to be rather good though. The locomotion is extensively optimized in a genetic algorithm to meet criterias for speed, stability and agility.



The first offensive version turned while walking, but since it seemed quite inefficient, this one turns around its own axis. Still, there are some issues with the stability while turning.

Its head is fixed in a forward looking position, but may scan for the opponent up and down.

A good attack is crucial for a good offensive robot. BobII knows it will face some other fencers, so it tries to push on the sides of the robot instead of right on.



Detecting a fall is also very important, at the moment, a simple reflex to extend its arms when falling has been added (in order for the robot not to roll).

Rising from back and belly has been greatly overruled to assure speed and stability.



The editor we developed is used to construct movements (and later on reflexes) in real time. Tools like graphs, buttons, sliders (as seen in picture) are easily added to assist development. The editor features a dedicated script-language for robotic movements.

Later, we plan to connect the editor with a genetic algorithm for easier optimization.



Action screenshot, edgerunner vs. fencer

