RoboCup 2000: CIIPS Glory goes Melbourne

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Abstract

This is the story of a team of robots, with two Norwegian and one Australian coach, participating in the Robot Soccer World Cup.

A short multimedia summary of a trip to Melbourne.

Content

The team

5 Soccer Eyebots.

Stephen Humble, volunteer. Programming field player, handling mechanics and public relations.

Petter Reinholdtsen, volunteer and team leader. Programming field player and operating system.

Mari Wang, volunteer. Programming goal keeper.

Jack Daniels, biped Eyebot. Public relations.

Experience

- Compasses worked perfectly, with less then 2 degrees error. (as opposed to our lab). We integrated it into our player on site.
- Overhead tracking system did not work at all. The lens was to wide, and we did not have zoom. No one had been working on this part since march, so everything where untested when we left for Melbourne.
- 24x7 access to the competition area a real must. We had a lot of programming left before we where ready to compete.
- No Internet-access was a pain. Forgot some headerfiles required to compiel the overhead tracker, and had to get one of the organizers to drive me to RMIT to download.

Experience (cont...)

- Some resets during game, the batteries holders are not good enough.
- Self localization using distance sensors failed due to badly calibrated sensors and too long calculation delay (10 second).
- Always hard to get access to the 418 and 433 MHz radio frequency. We had to make it easier to turn on and off radio. We should try moving to different frequencies.
- Omni-directional wheels is a big advantage.
- The dribbler allowed real ball control.
- Easy to get stuck on the angled walls, with no wheel touching the ground.

Experience (cont...)

- The all-wood soccer field was very nice. Knee-high table allowed to reach across without climbing. All-wood gave no compass disturbances.
- 4 Stooges had 12 frames per second using the same hardware as us. They could turn off interrupts and run the camera on full speed as they do not use (or have) any other sensors.
- Linux where used almost on more then half the computers in the competition area. Many of the middle size league teams used Linux on their robots as well.
- The information flow where flowing somewhere else. Find the league organizer and stay close to him.

The results

CIIPS Glory	TPOTS	0 - 3
CIIPS Glory	Rogi Team	0 - 10
CIIPS Glory	FU Fighters	0 - 7
Viperoos	TUD	2 - 0

It could have been a lot worse.

TPOTS stayed up all night before their game with us to adjust their software to stay further away from the opponents (us) to avoid damaging our robots. The adjustments did not turn out too well.

FU Fighters turned off their kickers and slowed down their robots a lot. So much the ball stopped on the goal line several times without entering the goal.

Local vision derby

The local vision teams had a small derby Wednesday evening to compare our performance. It was not too impressive. :-)

CIIPS Glory	4 Stooges	0 - 0
Viperroos	4 Stooges	0 - 0
CIIPS Glory	Viperoos	0 - 0

We scored a goal in the penalty shootout against Viperoos.

A lot of people where interested in the local vision and local CPU systems. A lot of teams wanted to start with “real robotics”, as one from FU Fighters phrased it.

I spoke to a Japanese professor with a local vision team with omni-directional vision and off board computers. There where not competing in RoboCup, but might come next year.

Highlights from the workshop

- Omni-directional vision using isometric mirror (F.M. Marchese, D.G.Sorrenti).

  Linear distance on the soccer field, full height view and detailed view close to the robot.
- Robust Real Time Color Tracking (M. Simon, S. Behnke, R. Rojas).

  FU Fighters plan to release the source for their overhead tracking system.

Biped robots

There where several biped robots on display. Some of them could even walk.

- Jack Daniels from University of Western Australia
- ? from De Laboratory Robotics de Paris, France
- PINO from Kitano Symbiotic Systems Laboratory, Japan
- MkII from Aoyama Universityis, Japan

Proposed rule changes

At the end of the last day, the small size league sat down to discuss our experiences with the tournament. Some important rule changes where discussed, and they will probably be implemented next year.

- The soccer field will probably be wider next year
- The colored balls will be replaced by colored paper patches

Videos

- Robot helmet-cam by FU Fighters
- Daily highlights by RoboCup 2000 webcast team
  - Arrival Saturday 26th August
  - F180; Pre-competition Sunday 27th August
  - F2000; Naist vs Golem Tuesday 29th August
- (Some random recordings by Petter Reinholdtsen)

Thank you

CIIPS GLORY

`http://www.robocup.org/` and `http://www.robocup2000.org/`

`http://ciips.ee.uwa.edu.au/~pere/soccer/`

Slides are available from Petter Reinholdtsen <pere@hungry.com>, `http://ciips.ee.uwa.edu.au/~pere/mypapers/robocup2000/`