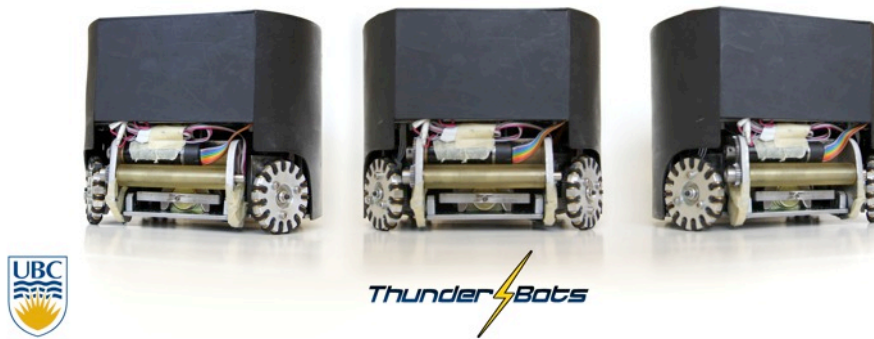


# THUNDERBOTS RANK HIGHLY AT INTERNATIONAL COMPETITION, ADVANCE THE BOUNDARIES OF ARTIFICIAL INTELLIGENCE

July 22, 2011

The UBC Thunderbots is a team from the University of British Columbia consisting of engineering and computer science students. They have just returned from the World Cup of robot soccer – the RoboCup International Competition and Conference – in Istanbul, Turkey. RoboCup is the largest robotics competition in the world, hosting close to 4000 researchers and competitors from 43 countries. The team competes in the Small Size League (SSL), where their autonomous robots play five-on-five soccer against teams from around the world.



## **Robotic Technology**

The team's 3 lb robots can move as fast as 8 km/h and are only 15 cm (6") tall, yet they are powerful enough to kick a golf ball at 35 km/h.

The team of robots is entirely autonomous, with no human control during games. Instead, they adapt to the opponent's plays and manoeuvres. Using the latest technologies, these robots push the research in automation, computer learning, and machine vision.

## **A Top 9 Finish**

Fueled by substantial upgrades to their mechanical structure, electrical control, and artificial intelligence, the team achieved an overall 9th place finish this year, highlighting their progress from their previous finishes of 16th in 2009 and 11th in 2010.

## **3rd place in both technical challenges**

In addition to the round robin and playoff games, there were two creative technical challenges designed to push the limits of the robots' hardware and software capabilities.

1. The first challenge tests the robots' ability to safely navigate between fast-moving obstacles by analyzing their environment, predicting hazards, and reacting in real-time.
2. The second challenge, in its inaugural year, is known as the "Mixed Team Challenge". Each team is actually comprised of robots from two teams, which have to autonomously collaborate and integrate their unique tactics.

A 3rd place finish in these challenges highlights the robustness of the Thunderbots' artificial intelligence, as well as the team's ability to think quickly and adapt their software.

## **Canadian National RoboCup Committee**

The Thunderbots' strongly support the newly formed Canadian National RoboCup Committee, which is responsible for coordinating league activities in Canada. Its members are dedicated to

promoting learning and research, fostering new teams in both junior and major leagues, and providing support to the RoboCup community.

The committee intends to place a bid to host the 2014 International RoboCup Competition in Montreal.

### **Newly Elected International Committee Members**

At the competition, two Thunderbots members were elected to international RoboCup committees for the Small Size League.

Amanda Li was elected as the Organizing Committee Chair for RoboCup 2012, due to her hard work and dedication as a member of this same committee this past year. Christopher Head was voted onto the Technical Committee and will be helping shape the league's technical aspects, including setting long-term goals and defining new rules.

Both will be working with researchers, students, and professors from seven countries to plan and coordinate the Small-Size League until next year's competition in Mexico City.

### **RoboCup Organization**

Beyond soccer, there are all-terrain rescue bots, robots that serve you tea, and robots designed by high school students. The competition puts all of these robots to the test, attracting the best and brightest from around the world.

The mission of the RoboCup organization is to push the boundaries of research and technology in robotics and artificial intelligence, all on a platform – soccer – that communicates at a global level. Its goal: to develop a team of fully autonomous robots that can play and win against the human World Cup champions by 2050.

You can find out more about RoboCup at [www.robocup.org](http://www.robocup.org).

### **Contact:**

E-mail: [robocup@ece.ubc.ca](mailto:robocup@ece.ubc.ca)

*Administrative Lead:*  
Amy Leson | 778.554.0245

*Technical Leads:*  
Jordan Balanko | 778.773.1940  
Andrea Palmer | 604.790.9805

