Second Prize winner at FIRA Robot World Cup Beijing 2001 &
Second Prize winner at Singapore Robotic Games 2002

The robot soccer setup is highly multi-disciplinary in nature, involving real-time vision processing, control, RF communication, robotics, agent technologies, AI and mechatronics. The robot soccer system provides an opportunity to foster intelligent techniques and intelligent robotic research where a wide spectrum of technologies can be developed, for example, collaborative multi-agent robotics, real time reasoning, sensor fusion, etc. The present day industrial environments deal with many complex systems and multiple mobile robots are easier, cheaper, flexible and fault-tolerant to build and use. Multiple mobile robots can accomplish performance benefits and are note spatially constrained as a single powerful robot.

In a robot soccer system the robots are not controlled directly by humans. There are cameras installed for each team above the field, which are connected to the computers to enable computers to 'watch' the match. Then, based on the strategy program that is already settled, those computers can make decisions on what to play next and, send signals to robots." The fundamental challenge in robot design is to program good software to endow the robots with the capacity to cope with any unexpected occasions.

The NUS robot soccer team (RoboLion) won second prize at the robot soccer competitions at the 2002 Singapore Robotic Games.

RoboLion also won second prize in the Benchmark competition at the FIRA Robot World Cup Beijing 2001. The benchmark competition consists of a series of benchmark tests on precise motion, control and tracking of the robots and the ball within the robot soccer test bed.

Tools like fuzzy logic and neural network are utilized in the system. Real time robot path planning is carried out using evolutionary artificial potential field (EAPF). The parameters of the EAPF are optimized through multi-objective evolutinary algorithm.

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Singapore Robotic Games 2002
9 - 11 May 2002
1st Runner-Up
Robot Soccer Competition (MIROSOT)
FIRA Robot World Cup China 2001
Benchmark
2nd PLACE
FIRA RWC China 2001
Organization Committee