Team Project

Video Analysis and Strategic Planning for RoboCup Players

Dr. Stephan Kopf
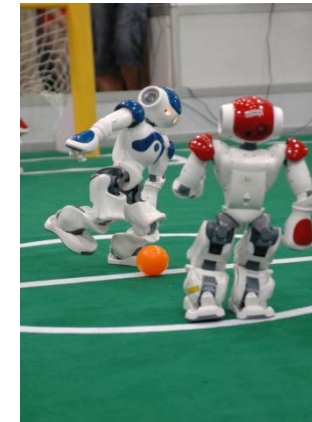
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What is RoboCup?

Simulation League

Four-legged robots

Standard Platform League

Goal of the RoboCup initiative

By mid-21st century, a team of fully autonomous humanoid robot soccer players shall win the soccer game against the winner of the most recent World Cup.

Images provided by robocup.org

Team Project: RoboCup

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Tasks of the Team Project

Design / program software to control RoboCup players

- Work in small teams (2-3 students in each team)
- Present / discuss the results with the other teams
- Compete against the other teams

Simulation league / Small size league

- Develop distributed algorithms to coordinate multiple agents in a dynamic environment
- Plan equipment acquisition (functionality, limited budget)
- Develop computer vision algorithms to identify players, court lines and the ball

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Research Challenges

Artificial intelligence

How can multiple RoboCup players cooperate in a highly dynamic environment? (multiagent collaboration, context recognition)

Computer graphics

How can RoboCup players recognize objects in their environment? (real-time sensor fusion)

Computer networks

How can RoboCup players communicate with other players?

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Questions?

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