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### Analyzing an AI agent

One of a real-world AI that I am interested in is Robocup (or robot soccer). Each robot on the field has to identify teammates and opponent team in order to pass the ball to a teammate, hide the ball or take the ball from the opponent and kick the ball to the opponent's goal without moving out of the field.



Task	Performance	Environment	Actuators	Sensors
Robocup (Robot soccer)	make goals to win the game.	Ball, teammates, competitors, soccer field	Navigator, legs of robot, view detector	camera, communicator links among team members, orientation sensors and touch sensors

Task environment	Observable	Deterministic	Episodic	Static	Discrete	Agents
Robocup (Robot soccer)	Partially	Stochastic	Sequential	Dynamic	Continuous	Multi

These Robot Soccer players have those above properties because each robot on the field cannot access the entire state of the field (blocked by others robot), so they are partially observable. The next state of these players on the field cannot be determined based on the current states since there are a lot of factors could influence on next move like opponents move, ball location, team members location and the current move may affect all the future states that lead the environment are stochastic and sequential. Since there are not only one robot on the floor and each robots contact with each other differently (pass the ball to team members or block the ball from opponent) by using a communicator, the environment on the field cannot be predicted and change

frequently which are corresponding to the dynamic, continuous and multi-Agents environment.

These robots have some specific goals like kicking the ball when having the ball and near the opponent goal, block the ball from nearest opponents, moving wisely to receive the ball, etc. Therefore these robot soccer player are goal-based agents.