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Artificial Intelligence Lab CSE B Engg.

1.
(a) Performance :-

* Accuracy of the face recognition Accuracy at different lighting conditions with different quality cameras.
* Versatility in devices such as laptop, mobile, desktop, etc
* Time for recognizing a face

Environment :

* Bright ~~light~~, dim lightings
* Places includes home, office, etc

Actuators :

* Displays for displaying the attendance, messages, etc.
* Face recognition software to scan and recognise a face.

Sensors:

* Camera sensors to get the image of the person
* IR could be used to differentiate between a photo & real 3D figure.

Autonomous Proctoring System

b). Performance :

* Detection of multiple windows open a single time to prevent cheating.
* Presence of any other persons to avoid cheating.
* Monitoring the student whether he is looking elsewhere
* Detecting if he is using mobile phones or any other devices.

Environment :

* Bright, dim areas
* Home, school, work places, etc.
* Disturbances occurs in such places.

Actuators :-

Displays for displaying indicating the whether the student is doing it something suspisious and error for messages.

Sensors :

Cameras, IR sensors.

* Cameras for capturing the image of the person and IR sensors for detecting between picture and 3D figure.

c) Robocup Soccer Competition

Performance :-

* Speed - movement speed of the robot
* Ability to dodge other robot
* Ability to ~~think~~ the find a way for the robot to move
* When it falls it should know how to get up
* Distance through which it can kick the ball.
* Accuracy with which it can kick the ball
* Defending especially for the goal keeper
* knowing all the rules.
* communication with other robots.

Environment :-

* Stadium in which the competition occurs.
* Presence of other robots.
* Goal post, ~~line~~ boundaries, etc.

Actuators :-

* Robotic legs to walk and kick the ball
* Hands to balance the robot.
* Hands and legs to get up when it happens to fall.
* Battery for the robot to function.

Sensors:

* Cameras present in front to get the visual about the environment.

* IR to measure distance.

* Proximity sensor for detection of nearby objects.

* gyroscope to detect the orientation position of the robot.

* Tactile sensor to get response from the physical contact with the environment football.

2) State representation:

State representation is the string of characters A, B, C, E.

Initial State:

ABABAECCEC.

Final State:

Sequence E.

Actions:

Performing substitutions AC=E, AB=BC, BB=E, EX=X for any x on the sequence subsequently.

Transitional model:

Applying substitutions and producing new sequence.

Cost Function:

Number of transformations.