Senior Design 1
Fall 2012

Assigned Projects
Tue 09/11/2012

Mechanized Game Board

- Develop a system that allows a human player to play against an AI system without using a computer.
- Develop an AI algorithm that can have competitive performance against a human player.
- Develop a mechanical board that can interface with the AI system.
- The actual game will be determined later. May be Chess or Reversi.

iTag: iPhone-Based People-Shooting Game

- The game allows people to shoot other people using their iPhones.
- An extension on the phone will represent the gun.
- A chest piece will capture "getting tagged".
- The system will keep track of who plays against who, synchronizing scores, who is getting tagged.

Board Game On-The-Go

- Develop a board game system that allows a game to be played both traditionally and through a mobile device.
- The system allows two people to start playing a traditional game on a physical board.
- If one player has to leave, a cell phone app synchronizes with the board.
- From that point on, the player who has left can play using their cell phone.
- The player who remains can still play using the physical board.

Robot Shooting a Basketball

- The system will build a robot that can shoot the basketball towards a hoop.
- A computer vision algorithm will locate the hoop.
- A mechanical component will turn the robot and figure out how to shoot the ball so as to score.
- The system will be demoable at the senior design lab (using a hoop that is placed at a lower-than-standard height), as well as at a regular basketball court, with a standard-height hoop.

Smart Mirror

- Develop a bathroom mirror that a user views in the morning, that displays information in addition to a reflection of the face.
- Information can include news, e-mail, weather, calendar.
- Information can also be collected about the user's health, e.g., temperature.
- The system needs to make sure that the mirror functionality (i.e., showing a reflection of the user's face) is not impeded by the additional information that is displayed.