






School of Information Technology

How To Play

Kung Foo Zoo is rock-paper-scissors, but with full-body Kung Fu postures.

You play against the computer in a series of rounds or bouts. To initiate each bout, bow respectfully to your opponent (the computer) and then prepare to strike a pose! When you are ready, strike your pose and maybe shout a “KYIII!” for good measure. The computer will also choose a pose, and the winner of the bout is determined and scored. Bow again to start a new bout.

Three poses are available: Panda, Monkey, and Mantis. The motions to make to adopt each pose are shown below.

Panda		Spread your arms sideways and wide
Monkey		Turn sideways and be on guard
Mantis		Raise your arms high and raise your leg or kick

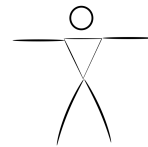
Don't forget to bow to start each bout.
--



beats



beats



beats



The Master

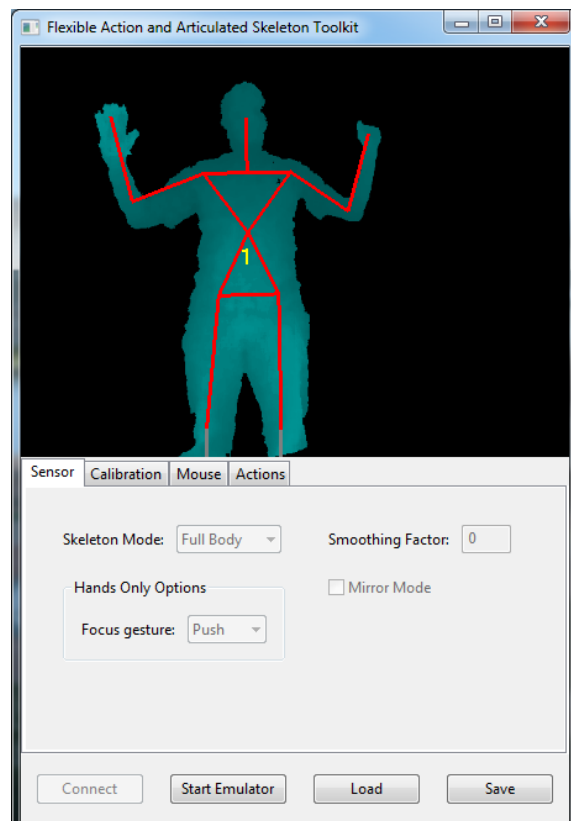
The novice computer player chooses poses randomly. However, the master plays with some strategy. Choose the master for a tougher opponent.

The Technology

Kung Foo Zoo combines Java GUI programming with XBOX Kinect technology.

XBOX Kinect

The XBOX Kinect recognises a human shape in its camera sight and constructs a wire-frame skeleton. The Kinect detects movement of the figure and reports on the positions of various anchor points in the wire-frame. The Kinect also understands depth of vision, so it can detect rotation as well as up-and-down movement!



FAAST

The Flexible Action and Articulated Skeleton Toolkit (FAAST)¹ is middleware to integrate full-body control. The toolkit relies upon software from OpenNI and PrimeSense to track the user's motion using the PrimeSensor or the Microsoft Kinect sensors. Additionally, the toolkit can also emulate keyboard input triggered by body posture and specific gestures.

Java GUI

The Java program runs the game and is controlled by the player's actions detected by the Kinect sensor. The GUI is triggered when FAAST sends keyboard input based on the player's gestures.

Strategy

It may seem like there is no possible strategy to this game, and, indeed, the novice computer strategy plays completely randomly. However, if the game is considered as a best-of competition over a number of rounds, there are strategies that can be played. Inspired by Axelrod's tournament of strategies for the Prisoner's Dilemma², Bond faculty experimented with different strategies for playing rock-paper-scissors. The Kung Foo Zoo Master plays using the best of these strategies.

Here At Bond

The concepts from all these technologies are covered in various courses at Bond. This is not to say that all students do is sit around writing and playing games! This program has some complex design and structuring, and some interesting algorithmic components. These topics are central themes in IT courses at Bond and applicable in all IT scopes.



¹<http://projects.ict.usc.edu/mxr/faast/>

²http://en.wikipedia.org/wiki/The_Evolution_of_Cooperation