LUABAB: Leeds University Angry Birds Artificial Brain

Many of you will be familiar with the popular Angry Birds video game where a player shoots birds from a slingshot with the aim of destroying pigs hiding among a variety of building structures. The game dynamics largely observes the laws of physics and it is possible to infer how the structure will change when hit at a certain position. But complex reasoning is often required to find a strategy that will solve a level by eliminating all pigs.

In 2012 a group of researchers at the Australian National University proposed that Angry Birds could provide a testbed for the development of computer systems with Artificial Intelligence (AI) and set up the Angry Birds AI Competition to encourage researchers to work on this challenge. The aim of the competition is to develop an intelligent Angry Birds playing computer program that is able to successfully play the game autonomously and without human intervention. The long term goal is to build AI agents that can play new levels better than the best human players. Full details can be found at http://aibirds.org/.

In order to successfully solve this challenge, participating programs must address multiple areas of AI including: computer vision, knowledge representation and reasoning, heuristic search, and machine learning. All these topics are both taught in undergrad modules and studied at research level in the Leeds School of Computing.

Several students in the Leeds School of Computing have done projects based on AI Birds (Johnathan Cook BSc, Ed Worthy MEng., Vilius Narbutas MEng) or worked on coding (Sam Wilson, studying for a PhD in Graph Theory).

Dr Brandon Bennett (lecturer and researcher at Leeds School of Computing) entered his LUABAB software into the most recent AI Birds competition held at the International Joint Conference on Artificial Intelligence (IJCAI) held in Beijing 6-8 August 2013. Twenty teams from around the world took part and LUABAB reached the quarter finals, with the 4th highest score in that round.

Instructions for downloading and running the LUABAB Angry Birds program can be found at: http://www.comp.leeds.ac.uk/brandon/AB/

It should only take about 5 minutes to get it running.