

Card-playing bots could doom online poker

The premise underlying online poker is that all players are humans. But with the growing availability of free poker "bot" downloads, it is becoming difficult to detect whether a player is real or a possibly unbeatable bot.

"It wasn't until mid-2000, [when] an algorithm was developed, that [bots] could even come close to a competent player. But now online computer poker playing may become a thing of the past," said Ian Fellows, a researcher at the University of California at San Diego and author of the open-source poker bot, "Fell Omen."

The UCSD researcher is offer free downloads of the poker bot. But according to his Web site: "I do not condone the use of this software on online gambling sites."

The phrase "Fell Omen," according to Fellows, also suggests the possibility of dooming online poker with open-source bots that can beat every human. The poker bot plays Texas Hold 'Em-style poker and is designed to hone human players' skills. "But since it's open-source, [so] programmers will be able to learn from and improve on its code," Fellows said. Fell Omen recently tied for second place during the AAAI's 2008 Computer Poker Competition. Unlike AAAI's Man-Machine Poker Competition where the bot developed at the University of Alberta beat a human champion, the Computer Poker Competition bots played against 16 other bots.

Fell Omen is based on an artificial intelligence algorithm called "fictitious play." The algorithm enables bots to use imperfect information. Unlike chess, for instance, players do not know what cards are held by other players. (In chess, all information is known to both players.) Normal game-tree searches like those used by chess-playing bots cannot be used for poker. So Fell Omen works by improving its statistics with each hand by compensating for past failures. That strategy is combined with randomness that prevents other bots from guessing its strategy.

Fell Omen "is all based on decision trees that tell you at any point in the course of the game, What's the probability you should raise, call or fold? Then it generates a random number and goes with that action," said Fellows.

To download the poker programs, including source code, go to <http://thefell.googlepages.com/pokercode>.