

## Computers Challenge Humans at WCCI2016

Following on the heels of Google's AlphaGo defeat of grandmaster Lee Sedol in March, Facebook USA's Dark Forest, Japan's Zen, and Taiwan's CGI computer programs will square off against professional Go players at the IEEE World Congress on Computational Intelligence in Vancouver. Prior to the AlphaGo win in Seoul, computers had only won at this level of play if they were given an advantage in the form of extra stones. Both sides are interested in what this tournament will reveal.

For computer scientists, computer-versus-human matches play an important role in developing intelligent machines that



can learn on their own. After IBM's Deep Blue defeated Gary Kasparov at chess in 1997, computer scientists wanted to do more than track and copy humans. Over the ensuing decades, the game of Go proved a formidable challenge to the computing intelligence community.

Martin Mueller explains a Go move to computer scientists at an early IEEE Computer-versus-Human Go competition in Barcelona, Spain on July 20, 2010. *(Photograph by Chang-Shing Lee.)*

For all its simplicity, Go is an exceptionally complex game. Unlike chess, where the number of possible plays are limited by the ways the pieces move on a 9 x 9 board, Go operates more like two-player Risk, where each player attempts to surround and capture the opposition on a 19 x 19 board, giving an "atari" (i.e. "check") as warning before the final play.

While Deep Blue retired after its chess win, computer scientists and Go players still have a lot to learn from playing Go, despite AlphaGo's win. Computers are challenged to develop adaptive play at different skill levels using less processing energy while Go players strive to become better players more quickly. As player Tai-Hsiung Yung of Taiwan notes, computer Go programs "help find blind points that are easily missed by humans" and "are absolutely useful for strengthening players' endgame skills."

In a similarly vein, Ming-Wan Wang of Japan says that programs allow players to "explore Go from another perspective [which] enhances our enjoyment of the game."

The Computer-vs-Human competition will take place at the Vancouver Convention Centre's West Level 1 on Monday, July 25 from 4:00 to 7:00 pm. The human players include female Japanese title holder Yimin Hsieh and high-ranked players Chun-Hsun Chou and Ping-Chiang Chou of Taiwan.

Following the competition, Dr. David B. Fogel, creator of the checker-playing "Blondie24" program, will explain the history and relevance of human-versus-computer competitions from 7:00 to 7:30 pm.

### Event Details

<http://oase.nutn.edu.tw/WCCI2016/poster.htm>