



**RMIT University & IEEE Signal Processing & Computer Chapters Presentation**

## **Evolutionary Computation: Darwinian Thinking Solves Real-World Problems**

**By Dr David Fogel, Natural Selection, Inc., USA**

**Wednesday, 26<sup>th</sup> March 2003**

**6:30pm refreshments (Meeting Room 10.11.104) for 7:00pm start (Lecture Theatre Room 10.11.03)  
Computer Science Department, RMIT University, Swanston Street, Melbourne**

### **Abstract**

Evolution, the process of random variation and natural selection, provides a design principle for solving real-world problems of considerable difficulty. This lecture will offer the motivation for using evolution as basis for optimizing solutions, as well as examples of its successful application to problems in transportation, medicine, and entertainment. In particular, the evolutionary program "Blondie24," which taught itself how to play checkers (draughts) and learned to compete at the level of human experts will be demonstrated. Blondie24 has been featured in the NY Times, the journal Nature, and the television game show Jeopardy. Attendees will have an opportunity to pit their skills against the program.

### **Speaker Biography**

Dr. David Fogel is Chief Executive Officer of Natural Selection, Inc. in La Jolla, California, USA. His experience includes over 17 years of applying computational intelligence methods and statistical experimental design to real-world problems in industry, medicine, and defense. Prior to joining Natural Selection, Inc. in 1993, he received his Ph.D. in engineering sciences from the University of California at San Diego in 1992, and has subsequently taught undergraduate and graduate courses in evolutionary computation, stochastic processes, and statistical process control. Dr. Fogel has over 200 publications in the technical literature, the majority treating the science and application of evolutionary computation. He is the author of six books, including *Blondie24: Playing at the Edge of AI*, 2002. Dr. Fogel served as the founding editor-in-chief of the *IEEE Transactions on Evolutionary Computation* (1996-2002), which has a circulation of several thousand IEEE members and distribution in libraries internationally. He was the founding president of the *Evolutionary Programming Society* (1991-1993) and was elected a Fellow of the IEEE in 1999. He also serves as the editor-in-chief of *BioSystems*. Dr. Fogel served as the general chairman for the 2002 IEEE World Congress on Computational Intelligence, held in Honolulu, Hawaii, May 12-17, 2002. He was recognized with the Sigma Xi Southwest Regional Young Investigator Award in 2002.

### **Contact Information**

Robert Slaviero, IEEE Signal Processing Society - Victorian Chapter Chair  
Tel: 9800 2000 Email: r.slaviero@ieee.org Web: www.ieee.org/vic

There is no admittance fee for this talk and non-IEEE members are also welcome.