

Hear from the people shaping our technology future

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Discovery Without Objectives

Abstract This talk will contemplate the implications of recent counterintuitive results from experiments with evolutionary algorithms that suggest that search (which is a metaphor for innovation and discovery in general) is sometimes most effective when it is not explicitly seeking an objective. In particular, through several experiments in interactive evolution and with an algorithm called "novelty search," a picture of innovation is emerging in which objectives can help to guide us one stepping stone away from our present understanding, yet ultimately become handcuffs that also blind us to essential orthogonal discoveries on the road to long-term innovation. While the implications of these insights for reaching our highest goals are in part sobering, the silver lining is that much can be gained by liberating ourselves from the temptation to frame all our projects in terms of what they ultimately aim to achieve. Instead, with evidence in hand, we can exploit the structure of the unknown by orienting ourselves towards discovery and away from the shackles of mandated outcomes.

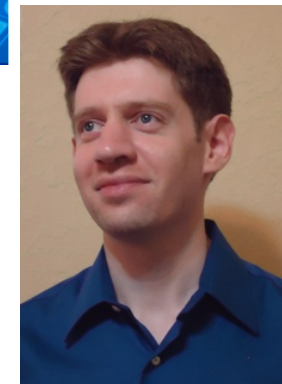
Biography Kenneth O. Stanley is an associate professor in the Department of Electrical Engineering and Computer Science at the University of Central Florida. He received a B.S.E. from the University of Pennsylvania in 1997 and received a Ph.D. in 2004 from the University of Texas at Austin. He is an inventor of the Neuroevolution of Augmenting Topologies (NEAT), HyperNEAT, and novelty search algorithms for evolving complex artificial neural networks. His main research contributions are in neuroevolution (i.e. evolving neural networks), generative and developmental systems, coevolution, machine learning for video games, and interactive evolution. He has won best paper awards for his work on NEAT, NERO, NEAT Drummer, FSMC, HyperNEAT, novelty search, and Galactic Arms Race. He is an associate editor of IEEE Transactions on Computational Intelligence and AI in Games, on the editorial board of Evolutionary Computation journal, and on the ACM SIGEVO Executive Committee.

Please contact Dr. Fabio Zambetta on ph. 99259694 if you have any enquiry.

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VRL Big Picture Seminar Information http://www.nicta.com.au/nicta_events/big_picture

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Date
Wednesday 8th August

Agenda
5pm – 6pm Light Refreshments
6pm – 7pm Seminar

Venue
Room 2, Level 5,
Bldg 12, RMIT City Campus
Map available at
<http://mams.rmit.edu.au/ah5hshrpo0ky.pdf>

RSVP
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By Friday 3rd August