



Distinguished Lecture Series

Computational Insights and the Theory of Evolution



Monday, September 23th, 2013 10:00am
Auditorium 106 at New IIS Building

Christos Papadimitriou

C. Lester Hogan Professor of EECS
University of California at Berkeley

Abstract

Covertly computational ideas have influenced the Theory of Evolution from the very start. After a historical overview, I shall discuss recent work on Evolution that was inspired and informed by computational insights. Considerations about the performance of genetic algorithms led to a novel theory of the role of sex in Evolution based on the concept of mixability, while the equations describing the evolution of a species can be reinterpreted as a repeated game between genes played through the multiplicative updates algorithm. Finally, a theorem on Boolean functions helps us understand better Waddington's genetic assimilation as well as mechanisms for the emergence of novel traits.

For more information: <http://www.iis.sinica.edu.tw/>

