Christoph Adami

Professor of Microbiology and Molecular Genetics & Professor of Physics and Astronomy at Michigan State University

East Lansing, MI, US

Expert in origins of life, artificial intelligence and computational evolution

Description

Chris is a computational biologist with a focus on theoretical, experimental and computational Darwinian evolution, studying how biological systems evolve from the simplest molecules to the most complex structures such as the human brain.

A professor of Microbiology and Molecular Genetics as well as Physics and Astronomy at Michigan State University, he uses mathematics and computation to understand how simple rules can give rise to the most complex systems and behaviors.

Chris has pioneered the application of methods from information theory to the study of evolution, and spearheaded the development of Avida, an Artificial Life simulator that uses mutating and adapting computer viruses as a tool for investigating evolutionary biology.

The author of over 120 peer-reviewed articles in biology and physics, Chris also wrote the textbook â€œIntroduction to Artificial Lifeâ€• (Springer, 1998). He was a principal scientist at the Jet Propulsion Laboratory at NASA, where he conducted research into the foundations of quantum mechanics and quantum information theory.

Chris is the recipient of NASAâ€™s Exceptional Achievement Medal, and he was also elected as a Fellow of the American Association for the Advancement of Science.

Chris earned a B.S. in Physics and Mathematics and a Diplom in Theoretical Nuclear Physics from the University of Bonn in Germany. His M.A. and Ph.D. degrees in Theoretical Physics are from Stony Brook University in New York.

Industry Expertise

Research, Writing and Editing, Education/Learning, Biotechnology, Health and Wellness

Topics

Evolution of cooperation, The role of epistasis in adaptation, Effects of phenotypic plasticity on evolution, Evolution of intelligence and cognition, including learning and memory, Adaptive radiation and speciation, Evolution of drug resistance in HIV-1, Evolution of behavior in animals (e.g., foraging, mate selection, swarming), Evolution of networks (protein, gene regulatory, neural, metabolic, social)

Affiliations

American Association for the Advancement of Science , American Physical Society, American Society for Microbiology, International Society for Artificial Life

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Education

SUNY at Stony Brook
Ph.D. Theoretical Physics

SUNY at Stony Brook
M.A. Physics

University of Bonn (Germany)
Diplom Theoretical Physics

University of Bonn (Germany)
B.S. Physics/Mathematics

Accomplishments

Excellence in Research Award
Awarded by KGI

Space Act Award
Awarded by NASA

Exceptional Achievement Medal
Awarded by NASA
