Complexity Digest 2005.33

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Content

4. Call for Papers

1. **Harvard Jumps Into Evolution Research With Net Initiative, Boston Globe**

Excerpts: The school is launching an ambitious research project that will bring together experts from a variety of fields, including astronomy and biology, to study how life emerged on Earth.

Researchers hope recent scientific advances, such as the discovery of water on Mars, will help them learn more about life's origins.

"My expectation is that we will be able to reduce this to a very simple series of logical events that could have taken place with no divine intervention," (...).

(...) some mysteries about life's origins cannot be explained.

- *Source:* Harvard Jumps Into Evolution Research With Net Initiative, Boston Globe, 05/08/14
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2. **Scientists Attack Bush Over Intelligent Design, Nature**

Excerpts: Intelligent design - the notion that certain features of living organisms are so complex that they must have been shaped by an external intelligence - has enjoyed increasing prominence among the US public, although not among scientists (...). This is despite Bush's science adviser John Marburger stating on the record that intelligent design is not a scientific theory.

Lawrence Krauss, a theoretical physicist (...), says that all scientists should be concerned. "Make no mistake - this is not an attack on evolution, but on science," he says.

- *Source:* Scientists Attack Bush Over Intelligent Design, Virginia Gewin, DOI: 10.1038/436761a, Nature 436, 761, 05/08/11
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3. **Correlation Analysis of Coupled Fitness Landscapes, Complexity**

Abstract: The correlation structure of fitness landscapes is a much used measure to characterize and classify various types of landscapes. However, analyzing the correlation structure of fitness landscapes has so far been restricted to static landscapes only. Here, we investigate the correlation structure of coupled, or dynamic, fitness landscapes. Using the NKC model of coevolution, we apply a correlation analysis on various instances of this model and present the results. One of the main goals of this article is thus to show that a previously introduced correlation analysis can be successfully extended to coupled

fitness landscapes. Furthermore, our analysis shows that this provides meaningful and interesting results that can contribute to a better understanding of coevolution in general

- *Source:* Correlation Analysis of Coupled Fitness Landscapes, Wim Hordijk, Stuart A. Kauffman, DOI: 10.1002/cplx.20092, Complexity 10(6):41-49, 2005/08/05
- Contributed by Carlos Gershenson
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1. **Four Correlates Of Complex Behavioral Networks: Carving Networks At Their Joints, Complexity**

Excerpts: Some of the most complex networks are those that (i) have been engineered under selective pressure (either economic or evolutionary), and (ii) are capable of eliciting network-level behaviors. Some examples are nervous systems, ant colonies, electronic circuits and computer software. Here we provide evidence that many such selected, behavioral networks are similar in at least four respects. (1) Differentiation: (...) (2) Behavior (...) (3) Connectivity (...) (4) Compartmentalization (...) A general framework is introduced illuminating why behavioral selected networks share these four correlates. (...) computer software provides a useful framework for comprehending the large-scale function and organization of biological networks.

   - *Source:* Four Correlates Of Complex Behavioral Networks: Differentiation, Behavior, Connectivity, And Compartmentalization: Carving Networks At Their Joints, M. A. Changizi - changizi@caltech.edu, D. He, DOI: 10.1002/cplx.20085, Complexity, Jul.-Aug. 2005, Online 2005/08/05
   - Contributed by Atin Das - dasatin@yahoo.co.in
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4. **The Secret Life Of Sperm, Nature**

Excerpts: Far from being mere DNA delivery boys, it's now becoming clear that sperm also ship a complex cargo of RNA and proteins that may be crucial for an embryo's early development. (...).

Sperm are amenable to detailed proteomic analysis because they contain no more than a few hundred proteins. But this apparent simplicity is deceptive. (...) In addition to the DNA instructions that spell out a male's contribution to a new life, these sleek, whip-powered cells (...) carry other pieces of cellular machinery, such as RNA and proteins.

- *Source:* The Secret Life Of Sperm, Claire Ainsworth, DOI: 10.1038/436770a, Nature 436, 770-771, 05/08/11
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