Synthetic Biology and Data-Driven Synthetic Biology for Personalized Medicine and Clean Energy

Russell Hanson (RSI/Harvard/TCIN)
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Data: Analytics and Visualization
Location: C124
Tags: data_scientists, synthetic_biology

Synthetic biology is a new field where basic biological components can be engineered to create something new. It often involves DNA synthesizers, ligation, promoters, and polymerase chain reaction—which may or may not be safe for your in silico environment. However, as the size and complexity of the systems increase, tools become more and more important, thus computer-aided design (CAD) for biology has emerged.

In this talk I will give the attendee some background on this emerging biological CAD field. Many of the tools are open source and easy to access. They also leverage interesting so-called design patterns in software and also in biology.

http://www.clothocad.org
http://www.eugenecad.org

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Russell Hanson
Russell Hanson was born in Palo Alto, CA on May 2, 1981 and grew up in California and Bloomington, IN. From 1999—2003 he studied in Portland, Oregon at Reed College, completing a bachelor’s degree in Physics. In 2005 he received an M.S. in Biology from Georgia Tech and his PhD studies were in Chemistry at Boston University. His research interests are varied and span machine learning and statistical learning, chemical engineering, biophysical and medicinal chemistry, cancer and cancer biology, quantitative finance, algorithmic trading and technology, synthetic biology and computational biology, quantum computation and information, natural language processing, and mathematical logic and recursion theory. Past academic appointments include Harvard, MIT, and the Technical University of Berlin. An entrepreneur and businessman, in 2008 he founded SciColab.com a collaborative website for scientists and researchers, co-founded LobeLink.com a web annotation and recommendation engine company, founded Reducible Systems, Inc a quantitative consulting company, and in 2009 co-founded TagHalo.com a word tag cloud-based information browsing/search system. He serves as Chairman of the Committee on Advanced Technology with the US national non-profit The Cure Is Now.

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