



UMass Lowell Computer Science Colloquium Announcement

Speaker: Dr. Nicola Stojanovic
Whitehead Institute/MIT Center for Genome Research
Date & Time: March 12, 2003, 2:15pm-3:15pm
Place: Olsen 311. **Refreshments are served at 2:00pm**

Deciphering the Mammalian Genome: An Engineer's Perspective on Genomics and Bioinformatics

The Human Genome Project, along with the advances in laboratory technology, has created an enormous wealth of data and vast opportunities, but it has also imposed a challenge to our ability to process and understand the information. In this talk I shall address some of the problems, with particular emphasis on issues in eukaryotic gene regulation. The quest to understand it has given rise to a wide range of computational approaches, and there is a growing consensus that comparative genomics methods are the most promising of all. I shall outline some of my earlier work on the use of sequence conservation in the search for potentially functional DNA segments, and the algorithms based on the Hamming distance between the sequences, minimal number of substitutions along the phylogenetic tree and region closure. This research has recently been extended to the study of mammalian Hox gene clusters. I shall present some of the work in progress concerning multiple alignment fragmentation and the assessment of differential phylogenetic footprints in Hox.

Brief bio: Nikola Stojanovic holds a Ph.D. degree in Computer Science and Engineering from The Pennsylvania State University. For the last 5 years he worked on the Human Genome Project at the Whitehead Institute/MIT Center for Genome Research, as a software engineer on the support of genome sequencing and as research interests are in the algorithms for the analysis of genomic sequence and multiple alignments. Prior to his doctoral studies and the involvement in life sciences he was a research engineer at the Institute for Automation and Telecommunications "Mihajlo Pupin" in Belgrade, Yugoslavia, working on software development for radar signal analysis and computer graphics. He holds a BS degree in mathematics from the University of Belgrade and an MS in Computer Science from Drexel University.

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