

Graph drawing algorithms for Bioinformatics

Michael Kaufmann
Tuebingen University

Abstract: Graph drawing has recently received growing attention as various techniques have been developed for applications in areas ranging from software technology to business modeling, from network administration to cognitive sciences.

Recently, we have designed and realized the tool yWays to support the analysis of biochemical pathways by visualization. In the talk, we will use this tool as a example to discuss to what extend the standard layout algorithms can be used, and what the challenges are to achieve 'real' applicability.

References:

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Algorithmic Challenges in Mass Spectrometry and Systems Biology

Benno Schwikowski
The Institute for Systems Biology, Seattle, USA

Abstract: Cell biology is in the middle of a paradigm change where approaches focusing on the biochemically oriented understanding of single genes are slowly replaced by the systems approach that views systems of genes and proteins in their network context [1]. In this talk we will examine a number of new computational challenges associated with this approach, from various aspects of interpreting peptide mass spectra, to the visualization and integration of heterogenous data types in the molecular network context [2-5].

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