

Public Abstract

Archana Chikkabel, ID# 817392

M.S.

Computer Science

Visualizing Biochemical Networks with NetView

advisor's signature

Graduation Term: Fall 2005

Networks are modelled as graphs and are represented visually using graph-drawing algorithms. Visualization of such big networks help biologists understand them.

In this paper, we present a Java3d-based visualization toolkit called NetView that is designed for the interactive three-dimensional visualization of biochemical networks. The network is first laid out in three dimensions using an algorithm and then rendered onto the screen for visualization and interaction. The system allows the examination of the network and querying the underlying database by each of its components. NetView offers basic navigational features such translation, scaling, and rotation of the network. It also offers features such as animation, traversal of the network in fly, walk, and orbit modes, and storage of snapshots of the network from various angles.