

Bioinformatics visualization: A review on a novel technique used in the interactorium

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The emerging field of bioinformatics visualization addresses the design of visual metaphors and implementation of effective software tools that provide insight into complex biological data. Visualization tools for protein interactions is not an in-mint concept with Cytoscape and VisANT (2D viewer), GEOMI and Arena 3D (3D viewer) etc. However, 3D navigability using Java based platforms wasn't fast and powerful enough. Interactorium, on the other hand, a novel 3D platform is built on Skyrails visualization engine (originally intended for social networking), permitting multi-level viewing of the molecular biology of the cell. The Interactorium, which can be used in most systems with a 3D graphics card, has two views- "the Complex Viewer" (which shows interactome without localization data) and "the Virtual Cell" (with localization data). The modus operandi allows visualizing the cell from 3 different levels: from the cell, to protein complexes and interactions, and into the protein structure. This new approach, as used by the Interactorium, is powered by a sophisticated database compiled by its makers and the strong point is that none of the data is hard

coded. An additional exciting application of the "Virtual 3D Cell" approach, is the ability to get better understanding of the inner cellular workings as in the static and dynamic nature of elements, along with real-time manipulation of networks and display control; also the prediction of the unknown bio-molecular interactions in a network, is in itself, a pro function of this form of visualization practice. These applications, in turn, bolsters the image of Interactorium, not just as a mere collection of amazing visuals (a relief from staring at monotonous tables of data), but also as a powerful tool for prediction in the field of cancer treatment and drug discovery.

Speaker Biography

Nihal Babu has his expertise in Protein Modelling from the Sathyabama University. He is pursuing his Master's degree at University of Skovde. He also has his expertise in evaluation and passion in improving the health and wellbeing. His open and contextual evaluation model based on responsive constructivists creates new pathways for improving healthcare.

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