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Visual Data Mining by Virtual Reality for Protein-Protein Interaction Networks

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Résumé : Currently, visualization techniques in the genetic field require a very important modeling phase in terms of resources. 2D based projections of traditional visualization techniques are rarely adapted to manage and process such huge mass of information. To overcome such limitation, we propose to use a new graph modeling technique. This,when used in conjunction with virtual reality technology, allows biologists to have a wide visibility and fluent exploration through several points of view and user interaction, thus enabling what we can call visual data mining of big scientific data.
The general principle of our approach is to build a biological network model in the form of a graph with a spatial representation adapted to the visualization of biological networks in a virtual environment. The results show that the improvement of the node distribution algorithm allows a better and more intuitive visualization, compared to the equivalent two-dimensional visualization.

Mots clés : virtual reality, visual data mining, big scientific data, protein interaction networks, user interaction

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