

Postdoctoral positions and PhD student position in computational and systems biology

Nanyang Technological University, Singapore

Two postdoctoral positions and one PhD student position in a project investigating missing and spurious links and labels of molecular networks are available at the Nanyang Technological University (NTU), Singapore (www.ntu.edu.sg). The project will begin in January 2017 and is led by Professor Jagath Rajapakse in the School of Computer Science and Engineering.

Protein-interaction networks are widely used in inferring disease mechanisms and in drug discovery. Missing and spurious links and labels of PIN are challenging and undermine the applications. The aim of this project is to develop computational techniques and tools for the prediction of missing and spurious links and labels by mapping the hierarchical modularity of protein interaction networks and gene ontology. Applications of the techniques to predicting biological pathways, prioritizing disease targets, and detecting hierarchies of protein complexes in diseases such as psoriasis, leprosy and cancer will be explored.

Postdoc 1 will research on various models of protein interaction networks, and their applications in predicting missing links, extracting network modules, the hierarchical structure of protein complexes, and prioritizing proteins. A potential candidate will have background and experience in biological network analysis, probabilistic models, or machine learning.

Postdoc 2 will investigate the graphical structure and missing labels of gene ontology, and the applications to inferring biological pathways from multiple biological data sources. A potential candidate will have experience in biological network analysis, bioinformatics, ontologies, or text mining.

The PhD student will work on the hierarchical modular architecture of protein interaction networks and mapping between the hierarchical structures of PINs and gene ontologies, and their applications to cancer.

For postdoctoral positions, PhD in a related field is required. For more details and applications, please send your curriculum vitae to Professor Jagath Rajapakse (asjagath@ntu.edu.sg).