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CALL FOR PAPERS

Journal of Parallel and Distributed Computing

Special Issue on High-Performance Computational Biology

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Computational Biology is fast emerging as an important discipline for academic research and industrial application. The large size of biological data sets, inherent complexity of biological problems and the necessity to deal with error-prone data all result in large run-time and memory requirements. Biological sequence databases are growing at an exponential rate. Recent invention of microarrays has facilitated high throughput studies of gene expression, allowing researchers to simultaneously sample the expression levels of tens of thousands of genes. All of these factors will make the application of parallel and distributed processing increasingly important in computational biology.

The goal of this special issue is to provide a forum for the publication of important research contributions in developing high-performance computing solutions to problems arising from molecular biology. We are especially interested in parallel algorithms for solving fundamental as well as applied problems, memory-efficient algorithms, large scale data mining techniques, and design of high-performance software.

Manuscripts submitted for this special issue should describe significant original research in the field of computational biology and be relevant to aims and scope of the Journal of Parallel and Distributed Computing. Topics of interest include but are not limited to:

- Bioinformatic databases
- Computational genomics
- Computational proteomics
- DNA assembly, clustering, and mapping
- Gene expression and microarrays
- Gene identification and annotation
- Parallel algorithms for biological analysis
- Parallel architectures for biological applications
- Molecular evolution
- Molecular sequence analysis
- Phylogeny reconstruction algorithms
- Protein structure
- String data structures and algorithms

Submission Guidelines:

Interested authors should submit an electronic version of the manuscript either in postscript or PDF format as an email attachment to one of the guest editors. If you are unable to submit electronically, please submit a hardcopy. The manuscript should be prepared according to the guidelines for the Journal of Parallel and Distributed Computing, available at <http://www.academicpress.com/www/journal/pc/pcifa.htm>.

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