Abstract

The preliminary research in the area of applications of neural networks and pattern matching algorithms in species classification is presented. Artificial neural networks for classification and different pattern matching algorithms for matching the given DNA patterns or strings with the existing DNA sequences available in the databases are specifically studied. A set of local searching algorithms were experimented for different test string lengths and their time complexity is tabulated. Conclusions and future directions are also presented.

References

- The website and Glossary maintained by Amateur Entomologists Society
- Jiawei Han and Micheline Kamber, Data Mining: Concepts and Techniques, Second Edition, Morgan Kaufmann publications, 2006.
- NeuralWare (2003), NeuralWorks Predict® Getting Started Guide for Windows, Carnegie, PA.
- Dr Yeshpal Singh and Alok Singh Chauhan, "Neural Networks in Data Mining"; Journal of Theoretical and Applied Information Technology, 2005 - 2009
- Felix Autenrieth, Barry Isralewitz, Zaida Luthey-Schulten, Anurag Sethi, Taras Pogorelov, Bioinformatics and Sequence Alignment, June 2005
- Fayyad, Piatetsky-Shapiro, Smyth and Uthurusamy, "Advances in knowledge discovery and data mining"; AAAI/MIT Press, 1995
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