Abstract

This paper presents a DNA based classification technique. It exploits the properties of the DNA as a quaternary logic with the advantages of better storage, better accuracy, and shorter time compared to binary logic. Several examples are employed to demonstrate using the DNA as a new classification method for differentiation between closely related objects such as boys and girls also we used neural network to demonstrate better accuracy and predict some objects for example boys. In addition the explanation of DNA computing, Boolean Circuit using DNA, Molecular Beacons, also DNA logic gates and some applications using DNA computing. Several programming tools are used to illustrate that using the MATLAB program.

References

1. DNA Computation: Applications and Perspectives, Somnath Tagore, Saurav Bhattacharya, Md Ataul Islam and Md Lutful Islam, Journal of Proteomics & Bioinformatics,
Using DNA Computing in Classification

JPB/Vol.3 Issue 7, www.omicsonline.com


6. DNA Simulation of Boolean Circuits, M. Amos, P. E. Dunne, Department of Computer Science, University of Liverpool, Report number CTAG-97009.

7. Ahrabian, H., A. Nowzari-Dalini, “DNA Simulation of NAND Boolean Circuits”, Department of Mathematics and Computer Science, Faculty of Science, University of Tehran, Tehran, Iran.


directed graph”, Proceedings of the 3rd DIMACS Workshop on DNA Based Computers, 2001,
pp. 127-141.


Science 337, 1628.

coloring problem. Proceedings of the IEEE 5th International Conference on Bio-Inspired
Computing: Theories and Applications (BIC-TA ’10); September 2010, pp. 231–235.

Classifier Based on Artificial DNA Computing for Hyper spectral Remote Sensing Imagery”,

Index Terms

Computer Science  
Artificial Intelligence

Keywords

DNA, DNA Computing, DNA Logic Gates, Molecular Beacons (MB).