Abstract

Genetic make-up of an individual is responsible for expression of external characters. Genes express through creation of intermediate products such as amino acids and proteins in turn. Proteins structurally and functionally are responsible for causing phenotype change. Some properties like mutations in gene may cause abnormalities. This makes it necessary to relate particular gene with the diseases it caused. Essence of gene and gene product information has proven its role in many aspects of life and disease-gene association is closely concerned with it. It has got the paramount importance in many fields like genetic engineering, forensics and clinical diagnosis. The availability of essential experimental data from various genetic and
protein related databases aided by state of the art computing technology has brought unforeseen revolution in the field of bioinformatics. Efforts on human genome project and GWAS (Genome Wide Association Studies) have brought radical development in sequencing and assembly. Post genomic era demands processing and usage of this valuable data in real practice to address real life scenarios. Various data mining and statistical approaches exist to address disease-gene association problem. We describe the analysis of such tools and techniques based on parameters like working principles, algorithms or methods used, speciality and limitations etc.

References

- N. ria LoA pez Bigas and C. A, "Genome-wide identification of genes likely to be involved in human genetic disease."
- E. W. A. Smith NGC, "Human disease genes: patterns and predictions."
  2003.
- Y. Freund and L. Mason, "The alternating decision tree learning algorithm,"
  in Proc. 16th International Conf. on Machine Learning. Morgan Kaufmann, San Francisco, CA,
  1999, pp. 124–133.
- C. Perez-Iratxeta, M. Wjst, P. Bork, and M. A. Andrade, "G2D: a tool for mining
  artid=1208881
- C. Perez-Iratxeta, P. Bork, and M. A. Andrade-Navarro, "Update of the G2D tool
- M. Masseroli, "Management and analysis of genomic functional and phenotypic
  controlled annotations to support biomedical investigation and practice," IEEE
  Available: http://dx.doi.org/10.1109/TITB.2006.884367
  Surendranath, V. Niranjan, B. Muthusamy, T. K. B. Gandhi, M. Gronborg, N. Ibarrola, N.
  Deshpande, K. Shanker, H. N. Shivashankar, B. P. Rashmi, M. A. Ramya, Z. Zhao, K. N.,
  N. Jensen, P. Roepstorff, K. S. Deshpande, A. M. Chinnaiyan, A. Hamosh, A. Chakravarti,
  and A. Pandey, "Development of human protein reference database as an initial platform
  pubmedcentral.gov/articlerender.fcgi?artid=403728
- Y. Chen, T. Jiang, and R. Jiang, "Uncover disease genes by maximizing
  information flow in the phenome-interactome network," Bioinformatics [ISMB/ECCB], vol.
- S. Damian, H. Syed, B. Benoit, H. Richard, L. Darin, T. Gudmundur, and K. Arek,
  "Biomart – biological queries made easy," 2009

Index Terms

Computer Science Genetic Techniques

Keywords
Phenotype  Genetic Engineering  Forensics  Gwas.