Abstract

Comparing and Contrasting Medical informatics (MI) and Bioinformatics (BI) and provide a viewpoint on their complementarities and potential for collaboration in various subfields. The authors compare MI and BI along several dimensions, including: (1) historical development of the disciplines, (2) their scientific foundations, (3) data quality and analysis, (4) integration of knowledge and databases, (5) informatics tools to support practice, (6) informatics methods to support research (signal processing, imaging and vision, and computational modeling, (7) professional and patient continuing education, and (8) education and training. It is pointed out that, while the two disciplines differ in their histories, scientific foundations, and methodological approaches to research in various areas, they nevertheless share methods and tools, which provides a basis for exchange of experience in their different applications. MI expertise in developing health care applications and the strength of BI in biological “discovery science” complement each other well. The new field of biomedical informatics (BMI) holds great promise for developing informatics methods that will be crucial in the development of genomic medicine, drug discovery and designing. The future of BMI will be influenced strongly by whether significant advances in clinical practice and biomedical research come about from separate efforts in MI and BI or from emerging, hybrid informatics sub disciplines at their interface.

Reference


[41] Blum B, Duncan K (Eds). A History of Medical Informatics. Reading: Addison
Wesley, 1990.


Index Terms

Computer Science  
Bio-Informatics

Key words

Modeling  
BMI

MIS

CPR

Interoperability

DNA

Automata theory

AI