Bernasconi

Model, Integrate, Search... Repeat

A Sound Approach to Building Integrated Repositories of Genomic Data

This book is a revised version of the PhD dissertation written by the author to receive her PhD from the Department of Electronics, Information and Bioengineering at Politecnico di Milano, Italy.

The work deals with one of the central objectives of the European Research Council project “Data-Driven Genomic Computing”, i.e., building an integrated repository for genomic data. It reflects the research adventure that starts from modeling biological data, goes through the challenges of integrating complex data and their describing metadata and finally builds tools for searching the data empowered by a semantic layer. The results of this thesis are part of a broad vision: the availability of conceptual models, related databases, and search systems for both humans and viruses genomics will provide important opportunities for research, especially if virus data will be connected to its host, the human being, who is the provider of genomic and phenotype information.

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