Education and Research in INFOBIOMED, the European Network of Excellence in Biomedical Informatics

Guillermo de la Calle¹, Erik M. van Mulligen, PhD², Eva Molero³, David Pérez-Rey¹, Luis Martín¹, Jose Crespo, PhD¹, Victor Maojo, MD, PhD¹,
¹Biomedical Informatics Group, Artificial Intelligence Lab./Facultad de Informática, Universidad Politécnica de Madrid, Madrid, Spain; ²Department of Medical Informatics, Erasmus University MC, Rotterdam, The Netherlands; ³Biomedical Informatics Research Group, Municipal Institute of Medical Research – IMIM, Barcelona, Spain

Abstract

During the last three years several initiatives have been deployed within INFOBIOMED, the European Network of Excellence (NoE) in Biomedical Informatics (BMI), for promoting research and education. In the context of genomic medicine, four research pilots were designed. To address the informational complexities of such research problems, new educational approaches are needed.

Introduction

The INFOBIOMED NoE¹ was born with the objective of structuring and strengthening a BMI community at the European Union (EU). The NoE was structured around four different main areas: (1) dissemination of BMI activities at the EU level, (2) BMI training and mobility, (3) technological research, and (4) clinico-genomic pilot projects.

Methods

Four different pilots were defined², covering from pharmainformatics and microbiology to diseases like periodontitis and colon cancer in the context of genomic medicine. Problems —e.g. data integration from genotype to phenotype, knowledge discovery from remote data sources or semantic heterogeneity— required new BMI approaches. To solve these kinds of information-related issues, active collaborative research was needed among the members. In such demanding scenario, the NoE was designed as a test for future actions in BMI education at the European level. To address these requirements, several initiatives were carried out:

A survey on educational needs and expectations: Lack of funding and opportunities for training and mobility exchanges were pointed out as the main barriers for education. To address these issues, the NoE established a mobility funding mechanism.

INFOBIOMED Course Database (ICD): A comprehensive list of BMI academic courses within the NoE was available through a web interface. The information is indexed using a training thesaurus and different text mining techniques.

Training Challenges: Young researchers with different backgrounds were gathered together in several editions over three years. They participated in a competition designed to enhance collaborative work to solve complex problems.

Summer School: held in Hungary jointly with members of other European NoEs to teach students topics such as ontologies, data mining and others. More than 50 students attended the event.

Mobility Brokerage Service (MBS): Using Web services technologies, a system to enhance mobility among the institutions, publishing jobs offers and demands was developed.

Results / Conclusions

Following the approaches mentioned above, numerous exchanges and educational activities were carried out. They were designed to address research issues (e.g., exchange of researchers with the required expertise among partners) and establish the basis for future actions in BMI education at the EU level.

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References