

Ontology Development Methodologies for Ontologies in Molecular Biology and Bioinformatics

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About five years ago, ontology was almost unknown in bioinformatics, even more so in molecular biology. Nowadays, many bioinformatics articles mention it in connection with text mining, data integration or as a metaphysical cure for problems in standardisation of nomenclature and other applications. This article attempts to give an account of what concept ontologies in the domain of biology and bioinformatics are; what they are not; how they can be constructed; how they can be used; and some fallacies and pitfalls creators and users should be aware of.

Biographical notes:

1984-1990: Studies of biochemistry and computer science, Free University Berlin and Duke University, NC.
1985-1990: German National Merit Foundation (Studienstiftung des deutschen Volkes) Scholarship.
1986-1987: Fulbright Commission and Duke University Scholarships
1990: Diplom-Biochemiker, Free University Berlin, Dept. Chemistry
1990-1992: Boehringer-Ingelheim Scholarship
1992: Dissertation (Dr. rer. nat.) "summa cum laude", Free University Berlin
1989-1995: Director of Bioinformatics, Brainware GmbH, Berlin
1995-1998: Group leader, Max-Planck Institute for Molecular Genetics, Berlin
1998: Co-organiser workshop at International Conference on Intelligent Systems for Molecular Biology (ISMB-98), Montreal
1998: Stanford University Research Scholarship
since 1988: Principle investigator in 16 R&D projects
since 1999: CIO (Chief Information Technology Officer), RZPD Ressourcenzentrum fuer Genomforschung GmbH, Berlin
2001: Habilitation (Dr. habil) and University Lecturer (Privatdozent), Free University Berlin, Dept. Computer Science
since 1995: Consultant in bioinformatics to industry, university, public and private funding agencies, national and international
since 1994: Reviewer for scientific journals and conferences
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since 1995: numerous presentations (submitted or invited) on inter-/national conferences