Proteomics, Computational Immunology and Machine Learning - Bioinformatics Research at FH Upper Austria, Hagenberg

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Facultad de Informática
Sala de Grados - viernes 8 de junio de 2018 - 12:00
Entrada libre hasta completar el aforo

Resumen:

In this talk we will discuss modern challenges and research directions in bioinformatics. First, we will discuss computational proteomics, which is dedicated to the design of algorithms that are able to identify proteins and peptides in data of biological samples (given as mass spectra). We will also discuss how machine learning techniques can be used here to improve the validation of peptide identifications. Second, we will discuss computational immunology and how data science helps to analyze data of transplantation patients. Again, we also use machine learning to learn models that distinguish between normal and critical progresses. Third, we will discuss machine learning approaches for learning models for cancer predictions and virtual tumor markers on the basis of clinical data from the General Hospital Linz.

Sobre Stephan Winkler:

Dr. Winkler studied computer science at JKU Linz and received his PhD in engineering sciences in 2008. His research interests include genetic programming, bioinformatics, nonlinear model identification and machine learning. Since 2009, Dr. Winkler is professor for bioinformatics at FH OO, Hagenberg; since 2011 he serves as head of the Bioinformatics Research Group. Dr. Winkler actively collaborates with numerous national and international research institutions and companies, amongst others he served as project leader of several research projects sponsored by the Austrian Research Funding Agency (FFG, e.g. NanoDetect and TOMO3D), was key researcher in several FFG-sponsored projects (e.g. Heureka! and HOPL), was key researcher in the EFRE-project Transplant, is co-project-leader of the FWF project SESAM. In summer 2014 Dr. Winkler was visiting scholar at BEACON (NSF Center for the Study of Evolution in Action at Michigan State University), and 2015 Dr. Winkler was guest professor at the Department for Applied Mathematics, Universidad de Alcalá de Henares, Madrid, Spain.