

HEIBRiDS Lecture Series – Wednesday 5th December, 16.00 - 17.00
@ Einstein Center Digital Future, RKF, Wilhelmstrasse 67

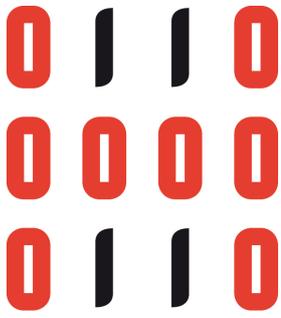
Programme

Location: Room 104/105/106

16:00 – 16:30 Data pipelines in multi-messenger and time-domain astronomy
Speaker: Jakob van Santen, DESY-Berlin (see next page for **Abstract**)

16:30 – 17:00 Machine Learning for Biomedical Research at WBI
Speaker: Prof. Dr. Ulf Leser, HU-Berlin (see next page for **Abstract**)

Next Lecture Series: [Wednesday, December 19th](#)



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Abstract 1

Data pipelines in multi-messenger and time-domain astronomy

Observational astronomy has expanded over the last decade to include two major new varieties: time-domain and multi-messenger astronomy. In time domain astronomy, we observe the beginning and aftermath of explosions and disruptions of stars on time scales from seconds to months. In multi-messenger astronomy, we combine observations with photons, neutrinos, and gravitational waves into a more complete picture of the most violent processes in the universe. Fully exploiting these techniques requires different approaches to data distribution and analysis than are typical in astronomy. In this talk I will review the kinds of problems that arise in real-time astronomy, and illustrate how they are addressed in the online analysis systems developed for the IceCube Neutrino Observatory at the South Pole and the Zwicky Transient Facility on Mount Palomar.

Abstract 2

Machine Learning for Biomedical Research at WBI

The talk will present several ongoing research topics at the chair of Knowledge Management in Bioinformatics that are concerned with applications of machine learning techniques in biomedical research. Concrete examples will cover entity recognition in scientific articles, black-box methods for predicting runtimes of tasks in large distributed dataflows, and signal deconvolution for the study of pancreatic tumors.

Bio:

Ulf Leser studied computer science at the Technische Universität München and holds a PhD in Data Integration from Technische Universität Berlin. After positions at the Max Planck-Institute for Molecular Genetics and in the private sector, he became a professor for Knowledge Management in Bioinformatics at Humboldt-Universität zu Berlin. His research focuses on scientific data management, statistical Bioinformatics, biomedical text mining and infrastructures for large-scale data analysis. He approaches these topics in interdisciplinary projects with experts from biology and medicine. He is speaker of the DFG funded graduate school SOAMED (Service-oriented architectures for medical applications),



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the BMBF-funded coordinated project PREDICT (Comprehensive Data Integration for Cancer Treatment) and a board member of the DFG-excellence funded Berlin School for Integrative Oncology (BSIO).