HEIBRIDS

Helmholtz Einstein International
Berlin Research School in Data Science

HEIBRiDS Lecture Series – Wednesday 8th May, 16.00 - 17.00
@ Einstein Center Digital Future, RKF, Wilhelmstrasse 67

Location: Room 104/105/106
Speaker: Uwe Ohler, MDC

How machine learning has transformed genetics

Sequencing of the human genome is one of the best known scientific achievements of the past decades. It is less known that all along, machine learning has played a major role in making sense of the genome: For over twenty years, ML has been used to locate genes, to predict their function, to find out how molecular networks break down in disease, and more.

I will explain how ML applications in the natural sciences have a very different quality from many other domains: The comparatively limited amount of (especially, labeled) data poses significant challenges and still requires domain expertise, especially for an understanding of the models and predictions. Notably, ML does here not merely reproduce or improve upon existing human skills, but is rather used to interpret new data and gain entirely new insights - to ultimately allow for targeted interventions, from congenital disorders in humans to photosynthesis in plants.

Next Lecture Series: **Wednesday, May 22nd**