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Optimization and Machine learning in action for data center automation, single cell analysis and glioblastoma research

In this talk, we explain and showcase our new data science methods ranging from statistics to integer optimization with three real world scenarios from life science and cloud computing.

First, we use our newly developed principal feature analysis for selecting genes from a single-cell data set whose expression are essential for generating the different phenotypes from the data set. Furthermore, the procedure demonstrates one notion of explainable AI. Second, periodic patterns in time series representing the utilization of cloud computing resources are identified with autocorrelation and ML models. The periodic part of the time series is quantified with a newly defined criterion. Third, we demonstrate how integer optimization can provide a systematic way to analyze genomic data to design synthetic DNA pieces that are used to report phenotypes in glioblastoma research and thus supporting to find new effective therapies.

Ort: Raum 30.02.003 (Mathematik West, 2.Stock)   Zeit: Mittwoch 15.02.2023, 11:30 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.
You are cordially invited to this lecture.

gez. Prof. Dr. Alfio Borzì
gez. Prof. Dr. Frank Werner