University of Basel

Department
Biozentrum

SIB
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BIOZENTRUM
The Center for
Molecular Life Sciences

Basel Computational Biology Seminar

21563 Current research in Bioinformatics II

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Epigenetic insights for precision medicine: Sequencing-based real-time brain cancer classification

The differentiation of a totipotent cell into a somatic cell type is a highly orchestrated process characterized by changes in the epigenetic landscape of a cell shaping its transcriptomic identity. One of these epigenetic layers is DNA methylation, which is mostly restricted to the symmetrical CpG context and about 60-80% of the approximately 28 million CpGs in the human genome are typically methylated. However, virtually all cancers deviate from this canonical methylation profile in often very specific manner. Here, we utilized a large, previously published cohort of Illumina methylation arrays (Capper et al., 2018) to train a real-time feasible machine-learning model together with rapid Nanopore sequencing to enable intra-operative brain cancer classification.

Date: Monday, February 24, 2025

Time: 16:15h – 17:30h

Location: Online via Zoom

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