MOPRED

The 3rd MOPRED Symposium 2025

Integrative Genomics and Machine Learning for Precision Health

I - Genomic Embeddings, Knowledge Graphs & Personalized Prediction

10:10 – Moritz Sturm
Genetic risk-aware embeddings of whole-genome data for multimodal applications

10:30 – Julia Gehrmann
Designing a reusable pipeline for integrating tabular data with neuroimaging

10:50 – Arber Qoku
Knowledge-guided matrix factorization for multi-omic perturbation analysis

11:10 – Gerd Specht
Machine learning approaches for activity-specific health profiling using wearable sensor data

11:30 – Simeon Platte
ML-based molecular burden scores: Predicting treatment outcome based on the genetic variation of underlying mechanisms

Poster Highlights & Networking

- 11:50 – Poster Short Talks
- 12:00 – Group Photo
- 12:05 – Lunch Break
- 12:30 – Lunch & Poster Session

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II - Transcriptome Models

13:45 – Jonas Schuck
NanoAIRR: full-length adaptive immune receptor profiling from Nanopore long-read sequencing

14:05 – Nikoletta Katsaouni
Mechanism of action-aware drug ranking with contrastive learning and gene expression profiles

14:25 – Laura Rumpf
Predicting gene-specific regulation with transcriptomic and epigenetic single-cell data

- 14:45 – Ewa Szczurek Keynote Lecture
  Hidden Dimensions of Biology: Latent Models for Multimodal Integration
- 15:25 – Poster Session II & Coffee Break

III - Aging, Cancer Biology & Single-Cell Atlases

16:30 – Fabian Kern
Identifying key cellular and molecular aging features in mouse adipose tissue using spatiotemporal transcriptomics

16:50 – Julia Eliseeva
Single-cell RNA sequencing analysis of premalignant lesions to elucidate early cancer progression

17:10 – Christina Kalk
Prediction and validation of split open reading frames across cell types

17:30 – Michael Tyler
Mapping cellular heterogeneity in cancer with the Curated Cancer Cell Atlas

17:55 – Award Ceremony & Closing Remarks

19:00 Dinner (self-funded)

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