

## **Interpretable Machine Learning for Personalized Medicine**

*Volker Roth*

Universität Basel

Studying the effect of a therapeutic intervention on a patient is one of the major goals in computational medicine. In this talk I will approach this problem in the context of three related themes namely causal inference, decision making and interpretability. On the methods side, a specific focus will be put on information theoretic deep learning models for identifying a suitable representation of confounding in order to quantify treatment effects, and on tree-structured regularization methods that can be viewed as a means of gaining interpretability for decision-making. Further, I will present some applications for predicting medical outcomes of hospitalized septic patients and for predicting HIV therapy outcomes.

---