Introduction to Machine Learning

Machine Learning as Black-Box Modeling

MACHINE LEARNING AS BLACK-BOX MODELING

- Many concepts in ML can be explained without referring to the inner workings of a certain algorithm or model, especially things like model evaluation and hyperparameter tuning.
- ML consists of dozens (or hundreds?) of different modelling techniques. Not clear which of them are really needed (outside of pure research) and which are really best.
- Understanding basic concepts and model-agnostic techniques is really paramount and can be achieved in a limited amount of time.
- Test

ML AS BLACK-BOX MODELING

Studying to understand the inner workings of each and every ML model can take years. Do we even need to do this at all for some models?

- No: The useful ones are implemented in software. We can simply try them out, hopefully using a helpful program that iterates over them and optimizes them for us (spoiler alert: that's `mlr`).
- Yes: Some basic knowledge is required to make sensible choices. Actually knowing what it is you are doing is always good, also outside of science.
  And if things go wrong
  – and they usually do –
  then understanding things really
  does help a lot, too.