PR Lab Talk #5

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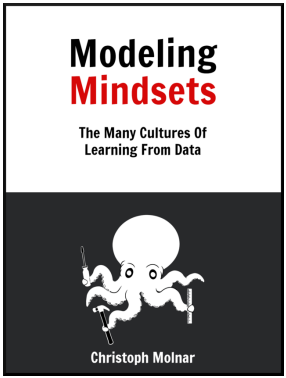
The statistician watched in horror as the deep learner kept adding more and more layers to his model. The model was a monstrosity; she had never seen anything like it. No theory about the data, no guarantees, just millions of parameters.

My Twitter Journey

- Elon Musk
- RBJ



Who is this guy?

- Interpretable Machine Learning-A Guide for Making Black Box Model Explainable

Christoph Molnar

Writer. Statistician.
Machine Learner

Munich, Germany

Modelling Mindsets

Do not read if you dig on to the mindset you already know and are not open the other mindsets?!

- Simple explanations with no math almost!
- Some interesting claims!
- Funny anecdotes!

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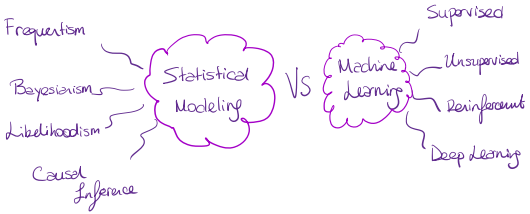
Big Battle


Frequentism
Bayesianism
Likelihoodism
Causal Inference
Statistical Modeling
VS
Machine Learning
Supervised
Unsupervised
Reinforcement
Deep Learning

Statistical Modeling vs Machine Learning

A machine learner walks along the beach. He sees a bottle in the sand opens it, and finds a genie who grants him a wish."I want to understand all machine leanring algorithms,"he says. The genie nods."Your wish is granted." The machine learner dissappears in a puff of smoke. In his place is a statistician.

- Statistician starts analysis with a statistical hypothesis, interprets parameters, and so on. Even if the machine learner ends up with exactly the same model the interpretation and use in practice would be different!
- ML focuses on task performance.

The T-shaped Modeler

- Pragmatic modeling requires many mindsets
- Don’t try to be an expert on all mindsets...
- Become a T-shaped modeller!!!

Questions for you!

- What is your mindset or are you already a T-shaped modeller?
- Modeller or Researcher?

Become an octopus!

Premises-Statistical Modeling

- Frequintism: The world is best approached through probability distributions with fixed but unknown parameters!
- Bayesianism: The world is best approached through probability distributions with fixed but unknown parameters!
- Likelihoodism: The world is best approached through probability distributions and likelihoods!
- Causal Inference: The world is best approached through causal reasoning!

Premises-Machine Learning

- Supervised: The world is best approached by making predictions.
- Unsupervised: The world is best approached through identifying patterns.
- Reinforcement: The world is best approached through interacting with it.
- Deep: The world is best approached through deep neural networks.