

AutoML: Introduction

Risks of AutoML

Bernd Bischl Frank Hutter Lars Kotthoff
Marius Lindauer Joaquin Vanschoren

Risks of AutoML

- ① Users apply AutoML **without understanding** anything.
 - ▶ Users might wonder why (Auto-)ML does not perform well after they passed in poor data.

Risks of AutoML

- ② Users **trust** AutoML too much.
 - ▶ humans might not use human reasoning skills and do not second guess machine decisions

Risks of AutoML

- ③ We enable non-ML experts to use ML without knowing the risks and consequences of ML.
 - ▶ E.g., bias in data and trained models

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 - ▶ **inaccurate models** due to lack of understanding of statistical concepts, e.g., sampling bias, overfitting, concept drift, ...
 - ▶ **biased and unfair models** due to lack of understanding ethical practices and use of features such as gender and race for predicting outcomes

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 - ↪ Future research topics (as of March 2020)

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 - ▶ Before using AutoML, users should still have a basic understanding of how to apply ML properly
- 2 Build systems that automatically warn of these risks
 - ▶ AutoML should go hand in hand with bias analysis
 - ↪ Future research topics (as of March 2020)
- 3 Can we automatically find ML systems that are less prone to such risks?
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