AutoML Adoption in ML Software

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Background

- AutoML aims to reduce the workload to apply ML
- How much is AutoML actually adopted?
- What facilitates the adoption of AutoML, and what inhibits it?

Survey

Target audience

- Teams developing software with ML components

Questions

- We use automated methods to generate or select features from input data
- We perform model selection and hyper-parameter optimisation in an automated way
- We use automated methods to configure our algorithms or the structure of our models

Answers

- Not at all; Partially; Mostly; Completely;
- Implicitly, because we use algorithms such as deep learning (only for the question on features)

Interviews

- How aware are people of AutoML?
- How do people benefit from using AutoML?
- What risks do people see in using AutoML?
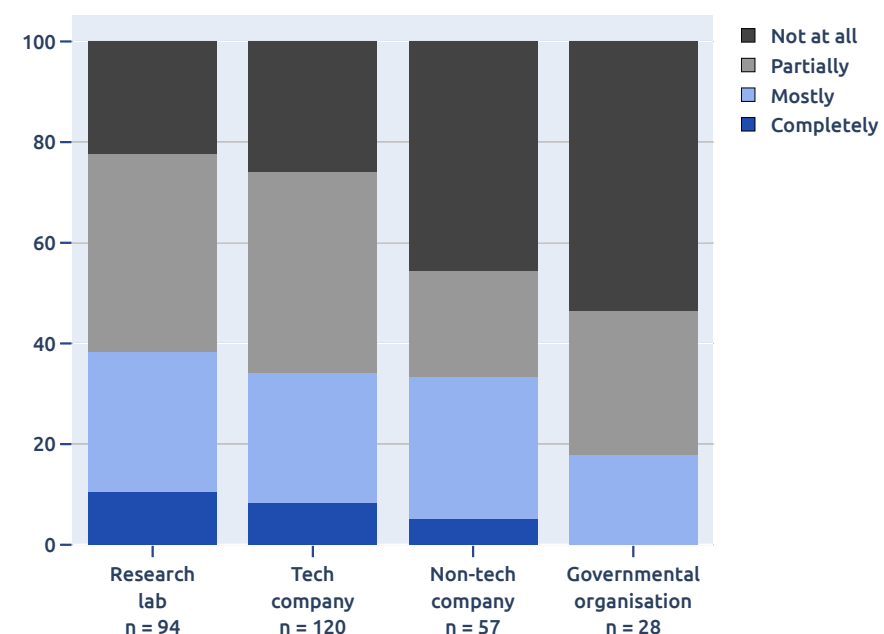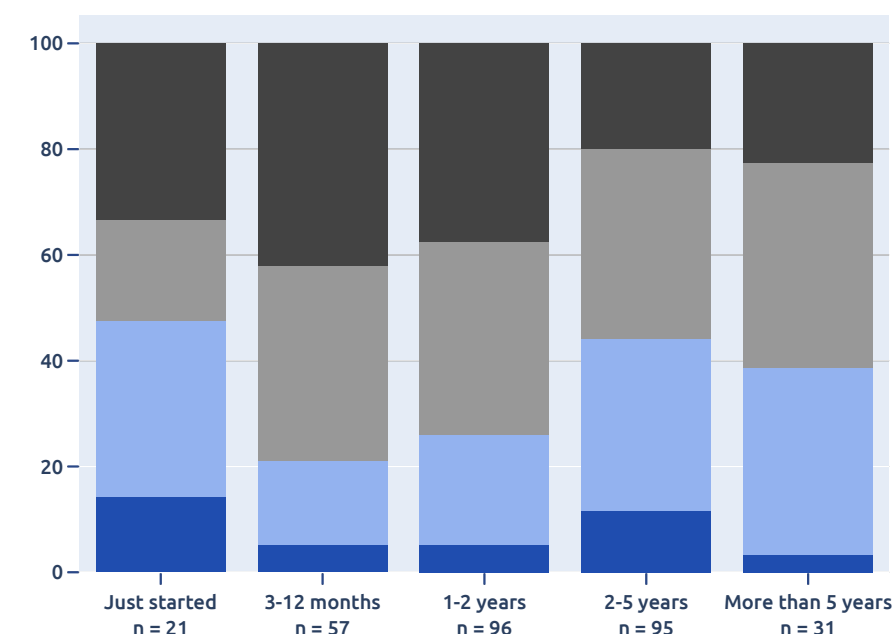- What challenges are there in using AutoML?

Learn more

`https:se-ml.github.io`

Take the survey

`https://se-ml.github.io/survey`

AutoML adoption is low. What is stopping people?

Survey version 1: Model selection and hyperparameter optimisation
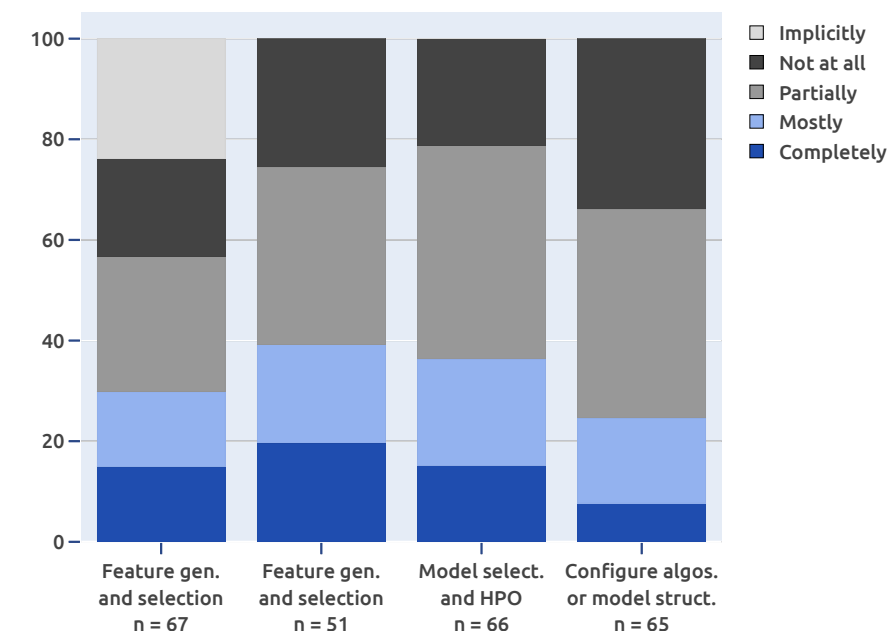
Results

Survey

- 20-30% do not adopt AutoML at all
- Another 50-60% do not completely adopt AutoML
- Experience seems to positively affect adoption

Interviews

- High initial cost to adoption
- Difficult to predict good run length for AutoML
- Limited availability of computational resources
- Unclear what is wrong when AutoML systems fail

Survey version 2: Adoption per practice