

SWITCHengines for Machine Learning

Linking Causal Analyses and Machine Learning Methods

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– Anthony Strittmatter, Assistant Professor for Econometrics



Anthony Strittmatter

My research

In my research, I combine causal analyses and machine learning methods. For example, in a project together with Michael Knaus and Michael Lechner, we investigate systematically the effect heterogeneity of training programs for the unemployed on re-employment chances. For this purpose, we use rich individual level administrative data from social-security records. We use machine learning tools to identify groups with strong effect heterogeneity. This enables us to develop efficient allocation rules for training programs.

My challenges

In many projects we have strong data security requirements. Typically the social security data cannot be stored outside of Switzerland. Our estimation methods are partly based on resampling techniques (e.g. cross-validation, bootstrapping), which are computational intensive. We require a secure IT environment which enables us to compute the estimation results in a reasonable amount of time.

My solutions

SWITCHengines is particularly useful when much computing power is required for a short time period or when access to the data/programs from different locations is needed. We want to use SWITCHengines as an academic cloud computing infrastructure for future projects. According to my current experience, the connection with SWITCHengines is very stable and SWITCH provides additional tools, such as SWITCHdrive and SWITCHfile-ender, which makes it convenient to work with SWITCHengines. Additionally, we use different providers for cloud research computing as well as physical machines (which are still cost-efficient solutions for permanent usage). A big advantage of SWITCHengines for our research is that the data remains in Switzerland.

Further information:

swit.ch/engines