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BOOK OF ABSTRACTS

Presentation type: Oral Presentation

bayesboot: An R package for easy Bayesian bootstrapping

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Abstract: Introduced by Rubin in 1981, the Bayesian bootstrap is the Bayesian analogue to the classical non-parametric bootstrap and it shares the classical bootstrap's advantages: It is a non-parametric method that makes weak distributional assumptions and that can be used to calculate uncertainty intervals for any summary statistic. Therefore, it can be used as an inferential tool even when the data is not well described by standard distributions, for example, in A/B testing or in regression modeling. The Bayesian bootstrap can be seen as a smoother version of the classical bootstrap. But it is also possible to view the classical bootstrap as an approximation to the Bayesian bootstrap.

In this talk I will explain the model behind the Bayesian bootstrap, how it connects to the classical bootstrap and in what situations the Bayesian bootstrap is useful. I will also show how one can easily perform Bayesian bootstrap analyses in R using my package bayesboot (https://cran.r-project.org/package=bayesboot).

Keywords: Bayesian, bootstrap, R package, Statistical inference, non-parametric statistics