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# DoubleML

The Python and R package **DoubleML** provide an implementation of the double / debiased machine learning framework of Chernozhukov et al. (2018). It is built on top of **mlr3** and the **mlr3 ecosystem** (Lang et al., 2019).

Note that the R package was developed together with a python twin based on **scikit-learn**. The python package is also available on [GitHub](#) and [pypi package 0.2.2](#).

DoubleML 0.2.1

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Links

Download from CRAN at <https://cloud.r-project.org/package=DoubleML>

Browse source code at <https://github.com/DoubleML/doubleml-for-r/>

Documentation and more

Documentation of functions in R: <https://docs.doubleml.org>

User guide: <https://docs.doubleml.org>

**DoubleML** is currently maintained by [@MalteKur](#)

Main Features

Double / debiased machine learning framework

- Partially linear regression models (PLR)
- Partially linear IV regression models (PLIV)
- Interactive regression models (IRM)
- Interactive IV regression models (IIVM)

The object-oriented implementation of **DoubleML** includes the classes **DoubleMLPLR**, **DoubleMLPLIV**, **DoubleMLIRM** and **DoubleMLIIVM** for the estimation of the parameters in causal models based on machine learning methods and the computation of the Neyman or Rubin causal effect. In particular functionalities to estimate the causal effect with the methods `fit`, `bootstrap`, `confint`, `p_adjust` and `plot` are provided. The specification in terms of ...

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# DoubleML - An Object-Oriented Implementation of Double Machine Learning in R\*

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## Abstract

The R package **DoubleML** implements the double/debiased machine learning framework of Chernozhukov et al. (2018). It provides functionalities to estimate parameters in causal models based on machine learning methods. The double machine learning framework consist of three key ingredients: Neyman orthogonality, high-quality machine learning estimation and sample splitting. Estimation of nuisance components can be performed by various state-of-the-art machine learning methods that are available in the **mlr3** ecosystem. **DoubleML** makes it possible to perform inference in a variety of causal models, including partially linear and interactive regression models and their extensions to instrumental variable estimation. The object-oriented implementation of **DoubleML** enables a high flexibility for the model specification and makes it easily extendable. This paper serves as an introduction to the double machine learning framework and the R package **DoubleML**. In reproducible code examples with simulated and real data sets, we demonstrate how **DoubleML** users can perform valid inference based on machine learning methods.