

Double ML: Causal Inference based on ML

Part IV: Outlook, Discussion and Conclusion

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Recap

Congratulations!

You made your first steps in causal machine learning with **DoubleML**

- Today we have covered
 - the challenges of causal machine learning
 - the basics of double machine learning
 - an introduction to the implementation with **DoubleML**
 - hands-on examples (price elasticity estimation, AB test)

Outlook



Outlook: What's next?

What's next?

- Continue your learning journey and visit our user guide to learn more about double machine learning, for example,
 - sample splitting,
 - hyperparameter tuning,
 - simultaneous inference,
 - clustering standard errors,
 - other model classes and score functions
- In case you find bugs or want to start or contribute to a discussion, visit our GitHub repository
 - <https://github.com/DoubleML/doubleml-for-py/issues>
 - <https://github.com/DoubleML/doubleml-for-py/discussions>

Extending DoubleML

We are currently working or planning various extensions of the `DoubleML` package

Double machine learning

- Extensions to heterogeneous treatment effects, CATEs and GATEs
- Extension of built-in resampling schemes
- New model classes and extensions of current classes
 - Difference-in-Difference estimators
 - Categorical treatment
 - Partially linear IV models
 - AutoDML
- New examples in our [gallery](#)

Python

- Integration of more learners (`pytorch`, `keras`, ...)
- Model diagnostics based on `scikit-learn` tools
- ...

Contributing to DoubleML

- We welcome contributions to **DoubleML**
 - Adding model classes, based on our **model template**
 - Change to model specific components, like nuisance estimation, scores, ...
 - Add your replicable example to our **gallery**
 - Contribute to **discussions**
 - Report bugs

→ **Contributing Guidelines** with additional information

<https://github.com/DoubleML/doubleml-for-py/blob/master/CONTRIBUTING.md>

Thank you, uai2022!

We appreciate your feedback

→ <https://forms.gle/otQThHgq6nYHrYzeA>



As a little "thank you", we will send you the official
DoubleML hexagon sticker



Thank you, uai2022!

In case you have comments or questions, feel free to contact us

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For knowledge transfer, industry collaborations, and trainings, check out and feel free to reach out

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Thank you uai2022

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References

Double Machine Learning Approach

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DoubleML Package for Python and R

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