Double ML: Causal Inference based on ML

Part IV: Outlook, Discussion and Conclusion

uai2022, August 1, 2022, Eindhoven

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Recap

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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?

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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

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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

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- 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!

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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!

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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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Acknowledgements

- We'd like to thank Malte Kurz and Victor Chernozhukov for their great collaboration, Sven Klaassen, Jannis Kück, Carles Riera, Oliver Schacht for contributing and collaborating and student helpers for support during the preparation of the tutorial.

- We'd like to thank the organisers of the 2019 ACIC Data Challenge for sharing the DGPs and granting us the right to use and distribute data sets.

References

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