**Literature (selective)**

**Average effects (day 2):**

**Reviews:**

Belloni, A., Chernozhukov, V., & Hansen, C. (2014). High-dimensional methods and inference on structural and treatment effects. *Journal of Economic Perspectives*, *28*(2), 29–50.

Chernozhukov, V., Chetverikov, D., Demirer, M., Duflo, E., Hansen, C., & Newey, W. (2017). Double/Debiased/Neyman machine learning of treatment effects. *American Economic Review Papers and Proceedings*, *107*(5), 261–265.

Athey, S., & Imbens, G. (2019). Machine learning methods that economists should know about. *Annual Review of Economics*, *11*, 685–725.

*In particular Section 6*

**Theoretical foundations (lecture):**

Belloni, A., Chernozhukov, V., & Hansen, C. (2014). Inference on treatment effects after selection among high-dimensional controls. *Review of Economic Studies*, *81*(2), 608–650.

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Chernozhukov, V., Chetverikov, D., Demirer, M., Duflo, E., Hansen, C., Newey, W., & Robins, J. (2018). Double/Debiased machine learning for treatment and structural parameters. *The Econometrics Journal*, *21*(1), C1–C68.

**Practically important issues:**

Chiang, H. D., Kato, K., Ma, Y., & Sasaki, Y. (2021). Multiway cluster robust double/debiased machine learning. *Journal of Business & Economic Statistics,* forthcoming.

*Dealing with clustering*

**More methods for binary treatment:**

Luque-Fernandez, M. A., Schomaker, M., Rachet, B., & Schnitzer, M. E. (2018). Targeted maximum likelihood estimation for a binary treatment: A tutorial. *Statistics in Medicine*, *37*(16), 2530–2546.

*Great starting point to understand TMLE*

Athey, S., Imbens, G. W., & Wager, S. (2018). Approximate residual balancing: Debiased inference of average treatment effects in high dimensions. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, *80*(4), 597–632.

*Approximate residual balancing*

Chernozhukov, V., Newey, W., Robins, J., & Singh, R. (2018). *Double/de-biased machine learning of global and local parameters using regularized Riesz representers*. Retrieved from http://arxiv.org/abs/1802.08667

*More general framework than Double ML 1 (very technical)*

Smucler, E., Rotnitzky, A., & Robins, J. M. (2019). *A unifying approach for doubly-robust L1 regularized estimation of causal contrasts*. Retrieved from http://arxiv.org/abs/1904.03737

*More general framework than Double ML 2 (very technical)*

Ning, Y., Sida, P., & Imai, K. (2020). Robust estimation of causal effects via a high-dimensional covariate balancing propensity score. *Biometrika*, 107(3), 533-554.

*Covariate balancing p-score in high-dimensions*

**Continuous treatments:**

Colangelo, K., & Lee, Y. Y. (2020). Double debiased machine learning nonparametric inference with continuous treatments. *arXiv preprint arXiv:2004.03036*

Semenova, V., & Chernozhukov, V. (2021). Debiased machine learning of conditional average treatment effects and other causal functions. The Econometrics Journal, 24(2), 264-289.

**Simulation studies:**

Naimi, A. I., Mishler, A. E., & Kennedy, E. H. (2017). Challenges in Obtaining Valid Causal Effect Estimates with Machine Learning Algorithms, (Ml). Retrieved from http://arxiv.org/abs/1711.07137

McConnell, K. J., & Lindner, S. (2019). Estimating treatment effects with machine learning. Health services research, 54(6), 1273-1282.

Zivich, P. N., & Breskin, A. (2021). Machine learning for causal inference: on the use of cross-fit estimators. Epidemiology, 32(3), 393-401.

**Applications:**

Urminsky, O., Hansen, C., & Chernozhukov, V. (2016). Using double-lasso regression for principled variable selection. Available at SSRN 2733374.

Knaus, M. C. (2021). A double machine learning approach to estimate the effects of musical practice on student’s skills. *Journal of the Royal Statistical Society: Series A (Statistics in Society),* 184(1), 282-300.

Kreif, N., & DiazOrdaz, K. (2019). *Machine learning in policy evaluation: new tools for causal inference*. Retrieved from http://arxiv.org/abs/1903.00402

Knaus, M. C. (2020). Double machine learning based program evaluation under unconfoundedness. arXiv preprint arXiv:2003.03191.

Baiardi, A., & Naghi, A. A. (2021). The Value Added of Machine Learning to Causal Inference: Evidence from Revisited Studies. arXiv preprint arXiv:2101.00878

**Miscellaneous:**

D’Amour, A., Ding, P., Feller, A., Lei, L., & Sekhon, J. (2021). Overlap in observational studies with high-dimensional covariates. *Journal of Econometrics*, 221(2), 644-654.

*Conceptual discussion of common support issues with high-dimensional data*

Kurz, M. S. (2021, April). Distributed double machine learning with a serverless architecture. In Companion of the ACM/SPEC International Conference on Performance Engineering (pp. 27-33).

*Computation considerations for Double ML*