

## Tasks for STAT548

**Identification and Estimation of Treatment and Interference Effects in Observational Studies on Networks**, L Forastiere, E. M. Airoidi, and F Mealli, *Journal of the American Statistical Association*, 116, 2021

- 1) Explain the proposed methodology and its relevance in the context of the literature. Summarize its advantages over other methods proposed in the literature (you can also include methods that are not mentioned by the authors).
- 2) Provide an example that illustrates the relevance of the results from Theorem 2A, Corollary 2 and 3.
- 3) If you have access to the data used in Section 6 of the paper, reproduce the results of Table1-Scenario1 and first 2 methods of Table2-Scenario1 (i.e., Unadjusted and Regression  $\sim Z_i, X_i^{\text{ind}}$ ).
- 4) Extension of the quantitative analysis. Use a dataset of your choice or extend the simulation study in a way that you consider relevant. Justify your selection. Include at least 2 methods in the comparison of results (does not need to match those in the paper). Illustrate and discuss your results.
- 5) Comment critically on the proposed method. You can refer to the existing literature and or give your own perspective. Discuss any mistake, shortcoming or problem in the paper or method (if you have identified any).

Submit a written report together with all codes used in the analysis. A short oral presentation may be requested.