

Data Science Toolbox Portfolio Questions

11 Ethics and Privacy

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Block 11

Portfolio 11

Choose **one question** and write up to **one page** about it. You are free to conduct further experiments to add weight to your results, and any additional material you generate can be submitted as an appendix. See [The Assessment Page](#) for advice.

These questions may make reference to the content from the current block.

Question R11.1: For a dataset that you have explored elsewhere, or otherwise, investigate whether you are able to re-identify the data without labels. The portfolio should be about the general ideas for how anonymisation and re-identification work, which are illustrated through case studies (i.e. discussion of specific examples). You are not expected to undertake a practical analysis but any coding you do to support your claims belong in an appendix.

Question R11.2: Briefly explain the goal of differential privacy. Compare and contrast Stochastic Gradient Descent and its differentially private counterpart, Algorithm 1 from [Deep Learning with Differential Privacy](#), relating it to one aspect of the course (spanning lecture notes, coursework you've done, or the portfolio).

Question R11.3: Consider [Section 3.2 Measures of Algorithmic Bias of Algorithmic Fairness](#). With an example (from your own work or from the paper) contrast **Equal opportunity** and one other measure, explaining how they could be used in practice.