

Stein’s method for network distributions

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Complex data are often represented as networks. To assess their behaviour, random network models such as exponential random graph models have been devised. To understand the distributions of random networks, characterisations can be derived using Stein’s method. This talk details how these characterisations can be put to use for assessing goodness of fit.

Moreover, synthetic data are increasingly used in computational statistics and machine learning. Some applications relate to privacy concerns, to data augmentation, and to method development. Synthetic data should reflect the underlying distribution of the real data, being faithful but also showing some variability. This talk addresses tests for goodness of fit of synthetic data generators using Stein’s method. Finally we shall see that Stein’s method can even be used to generate synthetic network data.

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References

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