

Using kernel methods to visualise crime data

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Abstract

Kernel smoothing methods can be used to better visualise data that are available over geography. The visualisations created by these methods allow users to observe trends in the data which may not be apparent from numerical summaries or point data. Crime data in the UK has recently been made available to the public at post code level, with visualisations of the amount of recorded events at each postcode for a given area available online. In this paper we apply existing kernel smoothing methods to this data, to assess the use of kernel smoothing methods as applied to open access data. Kernel smoothing methods are applied to crime data from the greater London metropolitan area, using methods freely available in R. We also investigate the utility of using simple methods to smooth the data over time. The kernel smoothers used are demonstrated to provide effective and useful visualisations of the data, and it is proposed that these methods should be more widely applied in data visualisations in the future.

Keywords: smoothing; open data; data visualisation; bandwidth