Topics in change point and anomaly detection

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With rapid technological advancements, the availability of massive and diverse datasets calls for novel statistical and computational tools. One notable feature of modern data is the underlying heterogeneity, especially when datasets are collected in temporal (or other meaningful) order in nonstationary environments, and detection of shifts in distributions or anomalous behaviour, is increasingly important. This project explores topics in detecting change points and anomalies in high-dimensional data including multi-order tensors, with the focus on uncovering the factors attributing to the fundamental difficulties in the detection problem.
The PhD candidate will be involved with activities of the EPSRC programme grant "Statistical Foundations for Detecting Anomalous Structure in Stream Settings" (EP/Z531327/1, `https://www.anomaly-programme.org/`).

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