

# Intelligent pattern recognition approach to identity resolution

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## **Abstract:**

Identity resolution is main issue for law enforcement agencies to tackle crime, identity theft and fraud due to complex and unstructured data that makes it difficult to identify correct identity out of all bogus identities. It is impossible to match true identity manually by a human expert in big data. Therefore, many researchers have used rule based, supervised learning approach for identity resolution but these methods mainly rely on training of data and human experts is required to label the data. Using an unsupervised learning approach can improve the results and can overcomes these issues provided string matching techniques are used correctly to produce results.

This research focuses on fuzzy approach to identity resolution using combination of string similarity techniques with iterative search process over anonymized policing dataset. The clustering technique has been used to group records based on similarity and for further analysis the classification of records produces matching records labelled as match and related match. The overall matching performance using the aggregate score calculated from string similarity techniques can increase by only processing records that have similarities rather than processing irrelevant records.

The research is progressing further to do record linkage of match records and further work is required on this to optimize the algorithm for desired results.