

MODELLING TERRORISM CULPABILITY: An Event-Based Approach

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OVERVIEW

Recently, researchers have become interested in the issue of assessing culpability for terrorist attacks when no group claims or multiple groups claim responsibility. Several new methods have been put forward for predicting culpability, traditionally assessed by intelligence analysts, including both machine learning and statistical classification models. These models have had varying degrees of success, with new ensemble classification models performing generally better than traditional statistical techniques. This paper applies a relatively new methodology, Random Forests, to the problem of culpability and compares it to some of the more frequently used statistical classification techniques including multinomial logistic regression and naïve Bayesian classification.

METHODOLOGY

Using data from the Philippines, the Random Forest technique, an ensemble enhancement of tree analysis is used to assign culpability to violent attacks. Three major groups, plus an “other” group, are used.

FINDINGS

Random Forest is able to accurately assign culpability in 87% of the attacks. This is a generalization error, not that computed from the training dataset.

FUTURE RESEARCH

More work needs to be done to compare this technique with some of the high-powered machine learning procedures (support vector machines), as well as improving the interface of these results with human analysts charged with counterterrorism roles.



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