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## Identification of vessel anomaly behavior using support vector machines and bayesian networks (Conference Paper)

Handayani, D.O.D.<sup>a</sup> [✉](#), Sediono, W.<sup>b</sup> [✉](#), Shah, A.<sup>a</sup> [✉](#)

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### Abstract

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In this work, a model based on Support Vector Machines (SVMs) classification to identify vessel anomaly behavior has been proposed and implemented. The results are compared to Bayesian Networks (BNs). The real world Automated Identification System (AIS) vessel reporting data is used in this work. The results shows that SVMs can achieve higher accuracy compared to BNs in both memory-test and blind-test. The effect of holdout method which are partitioned size of training and testing data set on the accuracy result are also investigated in this study. The proposed classifier demonstrates to be a viable tool for identifying the vessel anomaly behavior by its accuracy. © 2014 IEEE.

### Author keywords

Anomaly Behaviour   BNs   Holdout   Maritime Surveillance   SVMs

### Indexed keywords

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BNs   Holdout

Maritime surveillance

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Engineering main heading:   Bayesian networks

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Laxhammar, R. , Falkman, G. , Sviestins, E.

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