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网络、通信、安全

# SVM和ANN在网络安全风险评估中的比较研究

高会生, 郭爱玲

华北电力大学，电子与通信工程系，河北 保定 071003

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摘要 支持向量机和人工神经网络是人工智能方法的两个分支，详细介绍了支持向量机和人工神经网络原理。建立了网络安全评估指标体系，将支持向量机和人工神经网络同时应用于网络安全风险评估的过程中，通过实例比较了两者的评估效果，结果表明了支持向量机在小样本情况下分类正确率普遍高于人工神经网络，具有较好的分类能力和泛化能力；同时在训练时间上也有绝对的优势。实践证实了支持向量机用于网络安全风险评估的有效性和优越性。

关键词 支持向量机 人工神经网络 网络安全 风险评估

分类号

# Comparative study of network security risk evaluation based on SVM and ANN

GAO Hui-sheng,GUO Ai-ling

Department of Electronic and Telecommunication Engineering，North China Electric Power University，Baoding，Hebei 071003，China

**Abstract**

Support Vector Machine（SVM） and Artificial Neural Networks（ANN） are two branches of artificial intelligence，the principles of SVM and ANN are introduced in detail in this paper.The network security evaluation index system is established.SVM and ANN are applied to network security risk assessment process at the same time.Though the example，it indicates that the class exactness of SVM is higher than ANN under the conditions of limited training samples，acquires better class ability and generalization ability，it has the absolute superiority on training time than ANN.The validity and superiority of SVM on network security risk evaluation is approved.

**Key words** Support Vector Machine（SVM） Artificial Neural Network（ANN） network security risk evaluation

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通讯作者 高会生 guo_ai_ling@126.com