

基于核Fisher判别分析的无线传感器网络入侵检测算法

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摘要:

摘要: 无线传感器网络能量有限、计算能力有限, 传统网络中的入侵检测方法不适用于无线传感器网络。提出了一种基于核Fisher判别分析的无线传感器网络入侵检测算法, 利用核Fisher判别分析对比传感器节点数据和已建立的入侵行为特征来判断是否存在入侵行为。理论分析和仿真实验表明, 该方法能有效的检测入侵行为, 并且具有低能耗、计算量小的特点, 适用于计算能力有限、能量紧缺的无线传感器网络入侵检测。

关键词: 无线传感器网络; 入侵检测; 核Fisher判别分析; 模式识别

An Intrusion Detection Algorithm for WSN Based on Kernel Fisher Discriminant

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Abstract:

As the energy and computing power is limited in wireless sensor networks, so almost all of the traditional network intrusion detection schemes cannot be applied efficiently. In order to overcome the weaknesses, a intrusion detection algorithm for WSN based on Kernel Fisher Discriminant(KFDA) is proposed. The method exploits KFDA by comparing the sensor node data and established behavioral characteristics to determine whether there is intrusion. Theoretical analysis and simulation results show that the proposed scheme not only can detect intrusions effectively, but also can apply to intrusion detection for WSN which require less computing ability and limited energy.

Keywords: WSN; intrusion detection; Kernel Fisher Discriminant; pattern recognition

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