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## Comparative Study of Artificial Intelligence Based Intrusion Detection for Software-Defined Wireless Sensor Networks

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### **Abstract**

Nowadays, Wireless Sensor Networks (WSNs) are intensively used in highly sensitive environments such as water treatment plants, airports and hospitals. For this reason, the security of communications in WSNs is a very critical problem that must be tackled accordingly. A Software-defined network (SDN) is an architecture aimed at making networks more agile and flexible. A Software-Defined Wireless Sensor Network (SDWSN) is realized by infusing a Software Defined Network (SDN) model in a WSN. In this paper, three Artificial Intelligence (AI) approaches (decision tree, naïve Bayes and deep artificial neural network) used as intrusion detection systems (IDSs) in SDWSNs are analyzed and the results show that the decision tree approach is the best approach for implementing IDSs in classical SDWSNs given its performances.