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## **Network security defence system based on artificial intelligence and big data technology**

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**Abstract:** Communication network security is a defence against unwanted system modifications to access files and folders within a computer network. The increasing overlap between the physical and virtual realms of improved communication poses a problem of cybersecurity. In this research, the big data analytics-based security system (BDASS) has been proposed to improve the communication network's security defence system with artificial intelligence (AI). The big data sets representing multiple categories of data are used in big data analysis methods. AI offers algorithms that can think or learn and strengthen their behaviour. Automated systems currently are built on syntactic rules that are not necessarily sufficiently sophisticated to handle the degree of difficulty in the communication network system. The BDASS model achieves a less computation time ratio of 21.3%, misbehaviour detection ratio of 97.5%, attack prediction accuracy ratio of 95.6%, possibility ratio of 96.4%, and success rate of 98.7% compared to other methods.

**Keywords:** artificial intelligence; big data analytics; BDASS; big data analytics based security system; communication network security; cyber security.

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