

## System for the Detecting of Fake Profiles on Online Social Networks Using Machine Learning and the Bio-Inspired Algorithms

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**Abstract :** The proliferation of online activities on Online Social Networks (OSNs) has captured significant user attention. However, this growth has been hindered by the emergence of fraudulent accounts that do not represent real individuals and violate privacy regulations within social network communities. Consequently, it is imperative to identify and remove these profiles to enhance the security of OSN users. In recent years, researchers have turned to machine learning (ML) to develop strategies and methods to tackle this issue. Numerous studies have been conducted in this field to compare various ML-based techniques. However, the existing literature still lacks a comprehensive examination, especially considering different OSN platforms. Additionally, the utilization of bio-inspired algorithms has been largely overlooked. Our study conducts an extensive comparison analysis of various fake profile detection techniques in online social networks. The results of our study indicate that supervised models, along with other machine learning techniques, as well as unsupervised models, are effective for detecting false profiles in social media. To achieve optimal results, we have incorporated six bio-inspired algorithms to enhance the performance of fake profile identification results.

**Keywords :** machine learning, bio-inspired algorithm, detection, fake profile, system, social network

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