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Name of Department/Centre: Computer Science

Topic of Research: A Novel framework for social network security

Findings

Culmination of my research, spanning six chapters, The research summary of this thesis is as follow: The Chapter 2, present the state-of-the-art techniques in the area of social networks. We undertake a thorough analysis of several algorithms and their performance are compared using statistical testing. With help of statistical testing, it is observed which spam detection technique can be further used for research in domain of OSN. The chapter explores how the proposed methodologies by different researchers have contributed to enhancing security in OSN. In Chapter 3 a hybrid Data-Driven framework for Spam detection in Online Social Network is introduced. The sampling algorithm SMOTE-ENN is used to generate balanced data that is further fed to various deep learning classification techniques to identify whether the tweet is spam or ham. The Comparative studies of proposed framework with other state-of-art are also presented. Chapter 4 describes a novel fake profile detection framework using optimizable begged tree is presented. On a twitter dataset, the framework is tested, and a comparison analysis is also provided. Additionally, the performance of several machine learning methods used in developing various fake profile detection systems is presented. Chapter 5 present a metaheuristic optimization technique (TRFT) for Spam Detection in Online Social Network using Random Forest and Tabu Search. The chapter demonstrates the optimal value of random forest hyper parameters using tabu search technique. Through simulation using a twitter dataset, the effectiveness of the proposed framework is assessed, and the results demonstrate that the hybrid methodology's effectiveness has improved. Finally, Chapter 6 suggests future research directions in this exciting and developing area of study while outlining the constraints and limitations of the current study.