جامعة عبد المالك السعدي
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Université Abdelmalek Essaadi

Pole for Doctoral Studies
Center for Doctoral Studies
Sciences and Technology and Medical Sciences

ANNOUNCEMENT OF DOCTORAL THESIS DEFENSE

Mrs. Mariam RAMDI

Will present his research work with the aim of earning a Doctorate

Doctoral program: Engineering Sciences and Techniques
Discipline: Computer Science
Specialty: Artificial Intelligence and Graph Theory

On 26/07/2025 at 10H30 at the Videoconference room of ENSA of Tangier.

Under the theme

Enhancing Privacy in Social Networks: An Innovative User Similarity-Based Approach for Data Anonymization.

Front of the jury c omposed of:

First Name & Last Name	Establishment	Designation
Pr. Abdelhak TALI	FSJS Tangier, Abdelmalek Essaadi University	President/ Reviewer
Pr. Mourad EL YADARI	ENSAM Rabat, Mohammed V University	Reviewer
Pr. Mohamed GHAILANI	ENSA Tangier, Abdelmalek Essaadi University	Reviewer
Pr. Siham MASSOU	ENSA Tangier, Abdelmalek Essaadi University	Examiner
Pr. Wafae BAIDA	FST Tangier, Abdelmalek Essaadi University	Co-Adviser
Pr. Abdelouahid LYHYAOUI	ENSA Tangier, Abdelmalek Essaadi University	Supervisor

Research Laboratory: Laboratory of Innovative Technologies (LTI Lab)

Abstract

In the framework of social network platforms, especially as these platforms usually offer free services in exchange for the massive collecting of personal data, the preservation of user privacy is a basic issue. The often-used proverb, "If you're not paying for the product, you are the product," emphasizes how urgently strong systems to protect user privacy are needed. At the same time, social network channels are essential tools for extensive studies on social dynamics and behavioral change, they often inspire service providers to distribute anonymized data to outside parties. In this setting, consumers keep some control over their data by using the network architecture to acquire insights outside of their direct contacts, therefore broadening their local perspective.

Still, the sharing of such information begs serious privacy issues. Data anonymization in social networks has thus become a major subject of attention. Anonymization aims to separate personally identifiable data from publicly available databases therefore preventing direct identification of individuals. This mechanism seeks to minimize personal data exposure risks and preserve user confidentiality. In this field, maintaining the privacy of users and preserving the value of data for next studies remain fundamental issues in balancing.

With an eye toward user similarity in the social network graph, this dissertation investigates the difficulties in social network privacy protection. The main goal is to minimize information loss so assuring accurate and significant results, so balancing supporting research goals with maintaining user privacy. Aiming to maintain the integrity and dependability of social network studies, the method chosen in this research gives data responsible usage top priority. Inspired by user similarity, a new approach is developed to improve data anonymization by eliminating links reflecting the most robust user resemblance. This method greatly lowers the risk of re-identifying people in the datasets while nevertheless preserving the utility and relevance of the data for analytical purposes.

This research is carried out against the backdrop of the unparalleled interconnection made possible by social networks, which, although transforming in promoting worldwide relationships, raises growing issues about data privacy and information security. While tackling these difficulties, the research emphasizes the increasingly important crucial domain of data anonymization in social networks. This work presents an original strategy based on user similarities to solve constraints in current methods. The suggested framework consists of data preprocessing, user similarity computation, and an anonymization threshold establishment inside a disciplined multi-step procedure. The strategy is made more resilient by including advanced natural language processing (NLP) techniques into the methodology, therefore strengthening the representation of textual input and refining similarity computations.

Real-world data from extensively used social network platforms helps one assess the success of this approach. The results show that the suggested method preserves the analytical value of the data while so reasonably addressing privacy issues.

Finally, by offering a creative answer to the challenging problem of juggling privacy protection with data usability in social networks, this dissertation emphasizes the important contributions of the suggested research. The wider consequences of this method are explored, together with suggested future research paths meant to meet the changing difficulties in this dynamic and fast developing area.

Keywords: *Anonymization, Privacy, Data protection, Social networks*.