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تطبيق توزيع الأرقام الغريبة لتعزيز خوارزمية الأمان

Applying the distribution of the weird numbers for enhancing a security algorithm

مشروع التخرج مقدم كجزء من متطلبات الحصول على درجة البكالوريوس في تخصص امنية المعلومات في تكنولوجيا المعلومات.

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الطالب

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Abstract

This research explores the integration of weird numbers into security algorithms to enhance resilience and cryptographic strength. Weird numbers, characterized by their abundant yet unconventional properties, offer a unique avenue for innovation in the realm of cryptography. The project unfolds through a multi-faceted investigation, beginning with a theoretical exploration of weird numbers within number theory, elucidating their mathematical significance and potential applications in cryptography. Building upon this theoretical foundation, empirical analysis and practical implementation of weird number-based techniques are conducted to evaluate performance and security properties across diverse use cases. Implementation challenges are addressed, and optimization strategies are proposed to facilitate seamless integration into practical deployment scenarios. The findings underscore the potential of weird numbers as a valuable resource in cybersecurity, offering novel insights and opportunities for future research and development. Through interdisciplinary collaboration and innovation, this research contributes to advancing the state-of-the-art in cryptography and strengthening the security posture of digital systems in an increasingly interconnected world.

In the practical aspect of our project, we introduced a face recognition system that leverages mathematical equations to authenticate individuals based on facial features. The system employs advanced image processing techniques to analyze facial images and extract distinctive features, which are then quantified using mathematical algorithms, The core of the system lies in the calculation of the percentage of matching faces between a captured image and reference images stored in the database. This matching process is facilitated by mathematical equations that compute similarity scores based on key facial attributes such as shape, texture, and color distribution.