

In this issue

Research Article

[Open Access](#) [Research Article](#) PTZAID:TCSIT-9-174

Intelligent library management system

Published On: February 20, 2024 | Pages: 001 - 009

Author(s): Nikita Shivaji More*

A library is a collection of sources of information and similar other resources. The emergence of Intelligent Library Management Systems (ILMS) is a key trend in library automation. In libraries, the management of the book is a very complicated and time-consuming process. A Library includes books, question papers, newspaper journals, and previous year's project detai ...

[Abstract View](#) | [Full Article View](#) | [DOI: 10.17352/tcsit.000074](#)

Review Article

[Open Access](#) [Review Article](#) PTZAID:TCSIT-9-179

Redefining GCM's resistance to cryptanalysis with offset mechanisms

Published On: March 30, 2024 | Pages: 042 - 051

Author(s): Muhammad Faisal Nawaz and Yasir Nawaz*

The research paper proposes an enhancement to the Galois/Counter Mode (GCM) of authenticated encryption by introducing an "offset" mechanism. This modification aims to improve privacy and resist differential cryptanalysis without significantly impacting the mode's efficiency and simplicity. The improved GCM maintains its original features, such as minimal block cipher ...

[Abstract View](#) | [Full Article View](#) | [DOI: 10.17352/tcsit.000079](#)

[Open Access](#) [Review Article](#) PTZAID:TCSIT-9-178

Counter-Offset mode: A new paradigm in resisting differential cryptanalysis

Published On: March 30, 2024 | Pages: 033 - 041

Author(s): Muhammad Faisal Nawaz and Yasir Nawaz*

This study introduces the Counter-Offset mode, a novel advancement in block cipher encryption techniques designed to enhance the traditional Counter mode's resistance to differential cryptanalysis. By integrating a unique input transformation mechanism, the Counter-Offset mode significantly improves upon the security features of the conventional Counter mode without c ...

[Abstract View](#) | [Full Article View](#) | DOI: 10.17352/tcsit.000078

[Open Access](#) | [Review Article](#) | PTZAID:TCSIT-9-177

Enhancing cryptographic robustness with dual key chaining

Published On: March 14, 2024 | Pages: 026 - 033

Author(s): Muhammad Faisal Nawaz and Yasir Nawaz*

In this paper, we introduce an advanced mode of operation for block ciphers, named Dual Key Chaining Mode (DKC), aimed at bolstering cryptographic security for safeguarding sensitive information. Building upon the foundations laid by established modes while adhering to guidelines set by the National Institute of Standards and Technology (NIST), DKC innovates through a ...

[Abstract View](#) | [Full Article View](#) | DOI: 10.17352/tcsit.000077

[Open Access](#) | [Review Article](#) | PTZAID:TCSIT-9-175

A study of converter configurations for vehicular applications

Published On: February 20, 2024 | Pages: 010 - 022

Author(s): Ankur Kumar Gupta, Uliya Mitra* and Hemant Kumar Verma

Renewable energy sources like hydro, wind, geothermal and solar along with fuel cells are nowadays solutions to the global energy crisis, environmental issues, and fossil fuel exploitation. The nature of the output of these renewable sources is D.C. The role of DC-DC converters in the integration of energy sources with microgrids is vital. These converters find their ...

[Abstract View](#) | [Full Article View](#) | DOI: 10.17352/tcsit.000075

Revolutionizing supermarket checkout: A comprehensive review of Radio Frequency Identification (RFID)-enabled shopping carts for automatic payments and real-time inventory tracking

Published On: April 30, 2024 | Pages: 052 - 055

Author(s): Marios Vlachos*

This paper provides an in-depth exploration of Radio Frequency Identification (RFID)-enabled shopping carts, a novel solution tailored for automatic payments and real-time inventory tracking in supermarkets. Through the integration of RFID technology into shopping carts, these systems update the cart's contents automatically as products are added, thus optimizing chec ...

[Abstract View](#) | [Full Article View](#) | DOI: 10.17352/tcsit.000080

Internet of Things (IoT) and cyber security in the control of electrical energy systems: A review

Published On: February 24, 2024 | Pages: 023 - 025

Author(s): Yusuf Kocak and Nurettin Abut*

This article provides an assessment of the use of Internet of Things (IoT) technology in the control of electrical energy power systems and its cybersecurity risks. Electrical energy systems are complex and critical infrastructures today, and effective management and control of these systems are of great importance. The use of IoT technology in electrical energy syste ...

[Abstract View](#) | [Full Article View](#) | DOI: 10.17352/tcsit.000076