

## PREFACE TO THE EDITION

We are delighted to present the inaugural issue of the **International Journal of Information Technology Research Studies (IJITRS)**, which showcases innovative and impactful research addressing the technological challenges and opportunities of our time. This issue brings together forward-thinking studies that span artificial intelligence, cybersecurity, Internet of Things (IoT), human-computer interaction, and data-driven decision-making systems—demonstrating the breadth and depth of ongoing advances in the information technology domain.

The issue opens with a systematic exploration of deep learning-based intrusion detection systems for in-vehicle networks, signaling a critical evolution in automotive cybersecurity as vehicles become increasingly digitized and vulnerable to sophisticated cyberattacks. Following this, a compelling study on hybrid recommender systems introduces a novel framework that integrates collaborative, content-based, and knowledge-driven approaches to significantly enhance recommendation accuracy in dynamic environments.

Recognizing the exponential growth of connected devices, another contribution examines lightweight cryptographic techniques tailored for IoT, offering practical solutions to secure communications in highly constrained systems. Complementing this, a case-driven research on a web-based water and electricity monitoring application highlights the potential of IoT in promoting sustainable living through real-time resource analytics and smart utility management.

A key highlight of this issue is the study on Explainable AI (XAI) for extreme weather prediction, which merges deep learning with interpretability to create trustworthy, satellite-based forecasting systems—vital for disaster preparedness and climate adaptation. Closing the issue is a timely investigation into real-time sentiment analysis of helpdesk calls, which leverages natural language processing and speech recognition to improve emotional intelligence in customer service systems.

Together, these papers reflect the journal's commitment to disseminating research that bridges theoretical innovation with practical application. They exemplify the interdisciplinary nature of modern IT research and provide valuable insights for academics, technologists, and policymakers alike.

We extend our gratitude to the contributing authors, reviewers, and editorial team for their continued efforts in advancing high-quality scholarship. We hope this issue inspires further inquiry, collaboration, and innovation in shaping a smarter and more secure digital future.

Dr. Mini T V  
Chief Editor

## CONTENTS

SL. NO	TITLE	AUTHOR	PAGE NO
1	The Evolution of In-Vehicle Intrusion Detection Systems through Deep Learning: A Systematic Study	Vismaya K K & P.J Arul Leena Rose	1 - 6
2	Recommender Systems: Enhancing Prediction Accuracy Through Hybrid Data Mining Techniques	Mini T V	7 - 19
3	Securing the Internet of Things: A Comprehensive Analysis of Lightweight Cryptographic Approaches for Resource-Constrained Devices	Krishna Prasad K	20 - 35
4	Water Electricity Monitoring Web-Based Application	Prathamesh Deshmukh et al.	36 - 45
5	Development of Explainable AI (XAI) Based Model for Prediction of Heavy/High Impact Rain Events Using Satellite Data	Janvi S. Zamre et al.	46 - 64
6	Sentiment Analysis of Incoming Calls for Helpdesk	Shreyash Nandurkar et al.	65 - 89