



Jagan Institute of Management Studies 

NAAC A++ Grade & NBA Accredited MCA Program

3, Institutional Area, Sector-5, Rohini, Delhi-110085

Details of Publications in WoS/Scopus/UGC Care-II Journals

Annexure IV-B





Publication in Scopus /WoS/UGC CARE (Category-II) Journal for Academic session 2024-25

S.No	Faculty Name	Journal	Topic of the Paper	H Index	Indexing	Weblink	ISSN No.	Year of publication
1	Dr. Deepshikha Aggarwal	Journal of Informatics Education & Research	Harnessing AI Chatbots for Personalized Learning : Implications and Strategies and Education	9	ABDC Category 'C'	https://jier.org/index.php/journal/article/view/1171/978	ISSN: 1526-4726	01-07-2024
2	Dr. Deepshikha Aggarwal	Journal of Informatics Education and Research	Voice Based Assistance for visually Impaired Individuals	9	Scopus Indexed	https://jier.org/index.php/journal/article/view/1230/1036	ISSN: 1526-4726	01-07-2024
3	Dr. Deepshikha Aggarwal	Journal of Informatics and Education Research	Managing Smart Cities and Communities Using Machine Learning/ Deep Learning Approaches ased on Emerging Technology Trends: An Extensive Literature	9	ABDC Category 'C'	https://www.jier.org/index.php/journal/article/view/1925	ISSN 1526-4726	01-07-2024
4	Dr. Deepshikha Aggarwal	European Economic Letters	Smart Emotion Detection : An AI and IoT Approach to Speech Analysis	9	ABDC Category 'C'	https://eelet.org.uk/index.php/journal/article/view/2308/2079	ISSN 2323-5233	01-12-2024
5	Dr. Deepshikha Aggarwal	International Journal of Humanities Education	Innovative Teaching Pedagogy to promote Green Learning in Technical Institutions	9	Scopus Indexed	https://www.cm-os-cgrn.org/cgrn/jihe/issue-details.php?nid=394	ISSN: 2327-0063 (Print) ISSN: 2327-2457 (Online)	01-02-2025
6	Dr. Deepshikha Aggarwal	International Journal of Science, Mathematics and Technology Learning	Predictive Analytics in Renewable Energy: A case study of Solar and Wind Synergy	9	Scopus Indexed	https://www.thelearner-ijstml-cgrn.org/cgrn/issue-details.php?nid=516	ISSN: 2327-915X	12-03-2025
7	Dr. Deepshikha Aggarwal	International Journal of Science, Mathematics and Technology Learning	Virtual Reader for VIP (Visually Impaired Personnel)	9	Scopus Indexed	https://www.thelearner-ijstml-cgrn.org/cgrn/issue-details.php?nid=520	ISSN: 2327-915X	01-03-2025
8	Dr. Deepak Chahal	Journal of Marketing & Social Research (JMSR)	Squeak: Nurturing Creativity and Innovation with an Open Source Smalltalk Language	10	ABDC Category 'C'	https://jmsr-online.com/archives/2/3/	ISSN:3008-0711	02-04-2025
9	Dr. Latika Kharb	Journal of Marketing & Social Research (JMSR)	Squeak: Nurturing Creativity and Innovation with an Open Source Smalltalk Language	13	ABDC Category 'C'	https://jmsr-online.com/archives/2/3/	ISSN:3008-0711	02-04-2025
10	Dr. Archana Saxena	Journal of Informatics Education & Research	Harnessing AI Chatbots for Personalized Learning : Implications and Strategies and Education	7	ABDC Category 'C'	https://jier.org/index.php/journal/article/view/1171/978	ISSN: 1526-4726	01-07-2024
11	Dr. Archana Saxena	Journal of Informatics Education and Research	Voice Based Assistance for visually Impaired Individuals	7	Scopus Indexed	https://jier.org/index.php/journal/article/view/1230/1036	ISSN: 1526-4726	01-07-2024
12	Dr. Archana Saxena	Journal of Informatics and Education Research	Managing Smart Cities and Communities Using Machine Learning/ Deep Learning Approaches	7	ABDC Category 'C'	https://www.jier.org/index.php/journal/article/view/1925	ISSN 1526-4726	01-01-2025
13	Dr. Archana Saxena	European Economic Letters	Smart Emotion Detection : An AI and IoT Approach to Speech Analysis	7	ABDC Category 'C'	https://eelet.org.uk/index.php/journal/article/view/2308/2079	ISSN 2323-5233	01-12-2024
14	Dr. Archana B Saxena	International Journal of Humanities Education	Innovative Teaching Pedagogy to promote Green Learning in Technical Institutions	7	Scopus Indexed	https://www.cm-os-cgrn.org/cgrn/jihe/issue-details.php?nid=394	ISSN: 2327-0063 (Print) ISSN: 2327-2457 (Online)	01-02-2025
15	Dr. Archana B Saxena	International Journal of Science, Mathematics and Technology Learning	Predictive Analytics in Renewable Energy: A case study of Solar and Wind Synergy	7	Scopus Indexed	https://www.thelearner-ijstml-cgrn.org/cgrn/issue-details.php?nid=516	ISSN: 2327-915X	12-03-2025
16	Dr. Archana B Saxena	International Journal of Science, Mathematics and Technology Learning	Virtual Reader for VIP (Visually Impaired Personnel)	7	Scopus Indexed	https://www.thelearner-ijstml-cgrn.org/cgrn/issue-details.php?nid=520	ISSN: 2327-915X	01-03-2025



17	Dr. Geeta Sharma	Journal of Marketing & Social Research (JMSR)	Enhancing Organizational Sustainability by Fostering Employee Engagement through a supportive workplace culture	2	ABDC Category 'C'	https://jmsr-online.com/article/enhancing-organizational-sustainability-by-fostering-employee-engagement-through-a-supportive-workplace-culture-15/	ISSN(Online): 3008-0711	Jan-Jun 2025
18	Dr. Geeta Sharma	ASIAN AND PACIFIC ECONOMIC REVIEW	iPhone Success Story: Revealing the India's Manufacturing Boom	2	ABDC Category 'C'	https://aspaeview.org/article/view/192	ISSN: 1000-6052	11-09-2024
19	Dr. Geeta Sharma	Journal of Informatics Education and Research	Exploring Consumer Intentions to Buy Organic Food in Delhi-NCR	2	ABDC Category 'C'	https://jier.org/index.php/journal/article/view/2974/2422	ISSN: 1526-4726	01-05-2025
20	Dr. Deepti Khanna	International Journal of Science, Mathematics and Technology Learning	Educating for Tomorrow: The Synergy of Generative AI and Sustainable Higher Learning	2	Scopus Indexed	https://www.thelearner-ijmsmtl-cgrn.org/cgrn/issue-details.php?oid=523	ISSN: 2327-915X	01-03-2025
21	Dr. Deepti Khanna	International Journal of Science Mathematics and Technology Learning	Balancing Tradition & Safety: Security Challenges in managing Maha Kumbh	2	Scopus Indexed	https://www.thelearner-ijmsmtl-cgrn.org/cgrn/issue-details.php?oid=555	ISSN: 2327-915X	14-04-2025
22	Mr. Devesh Lowe	International Journal of Humanities Education	A Review of Deep Learning and NLP based Techniques used for Detection of Hate Content Against (LGBTQ+ on Social Media	6	Scopus Indexed	https://www.cm-05-cgrn.org/cgrn/ijhe/issue-details.php?oid=481	ISSN - 2327-2457	May-25
23	Mr. Devesh Lowe	International Journal of Science Mathematics and Technology Learning	Comparative insights on generative AI and Human Intelligence : A Review of Experiment based studies	6	Scopus Indexed	https://www.thelearner-ijmsmtl-cgrn.org/cgrn/issue-details.php?oid=577	ISSN - 2327-915x	May-25
24	Mr. Devesh Lowe	International Journal of Humanities Education	QRs at Mahakumbh : Digital India Storms the Big Stage	6	Scopus Indexed	https://www.cm-05-cgrn.org/cgrn/ijhe/issue-details.php?oid=503	ISSN - 2327-2457	May-25
25	Mr. Devesh Lowe	International Journal of Science, Mathematics & Technology Learning	Enhancing Chameleon Swarm Optimization Algorithm with Galois Method for Improved Test Case Selection	6	Scopus Indexed	https://www.thelearner-ijmsmtl-cgrn.org/cgrn/issue-details.php?oid=602	ISSN : 2327-915X	May-25
26	Dr. Nainika Kaushik	CINEFORUM	A Comparison of Particle Swarm Optimization and Its Normalized Variant	3	UGC Care (Category-II); Web of Science	https://revistadecineforum.com/index.php/cf/article/view/134	ISSN: 0009-7039	01-09-2024
27	Dr. Shivani Vats	Journal of Informatics Education & Research	A systematic analysis on Chatbot Information Security	2	ABDC Category 'C'	https://jier.org/index.php/journal/article/view/1350	ISSN: 1526-4726	01-08-2024
28	Dr. Shivani Vats	European Economic Letters	Solar Irradiance Prediction in the Amazon Basin Using Machine Learning: A Sustainable Approach for Renewable Energy Expansion	2	ABDC Category 'C'	https://www.eeet.org.uk/index.php/journal/article/view/1739	ISSN 2323-5233	01-07-2024
29	Dr. Shivani Vats	International Journal of Science, Mathematics and Technology Learning	Educating for Tomorrow: The Synergy of Generative AI and Sustainable Higher Learning	2	Scopus Indexed	https://www.thelearner-ijmsmtl-cgrn.org/cgrn/issue-details.php?oid=523	ISSN: 2327-915X	01-Mar-25
30	Dr. Shivani Vats	International Journal of Science Mathematics and Technology Learning	Balancing Tradition & Safety: Security Challenges in managing Maha Kumbh	22	Scopus Indexed	https://www.thelearner-ijmsmtl-cgrn.org/cgrn/issue-details.php?oid=555	ISSN: 2327-915X	14-04-2025
31	Dr. Shivani Vats	European Economic Letters	Harnessing Artificial Intelligence to Advance Green Education : Perceptions, Challenges and Implementation	2	ABDC Category 'C'	https://eeet.org.uk/index.php/journal/article/view/3133/2803	ISSN 2323-5233	May-25

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32	Dr. Shivani Wadhwa	Journal of Information Education & Research	A study to assess student mindset for promoting sustainable lifestyle	3	ABDC Category 'C'	https://jier.org/index.php/journal/article/view/2672/2182	ISSN - 1526-4726	May-25
33	Dr. Shivani Wadhwa	Advances in Consumer Research	Digital Literacy in Higher Education : Preparing students for Future Workplaces	3	ABDC Category 'B'	https://acr-journal.com/article/digital-literacy-in-higher-education-preparing-students-for-future-workplaces-1266/	ISSN No. 0098-9258	June 30, 2025
34	Ms. Deepika Gahlan	Journal of Informatics Education & Research	A systematic analysis on Chatbot Information Security		ABDC Category 'C'	https://jier.org/index.php/journal/article/view/1350	ISSN: 1526-4726	01-08-2024
35	Ms. Deepika Gahlan	European Economic Letters	Solar Irradiance Prediction in the Amazon Basin Using Machine Learning: A Sustainable Approach for Renewable Energy Expansion		ABDC Category 'C'	https://www.eeet.org.uk/index.php/journal/article/view/1739	ISSN 2323-5233	01-07-2024
36	Ms. Deepika Gahlan	Evolutionary Intelligence, Springer,	Optimizing traffic flow with q- learning and genetic algorithm for congestion control published in evolutionary intelligence		ESCI; Scopus Indexed	https://link.springer.com/article/10.1007/s12065-024-00978-9	ISSN:1864-5917	Sept, 2024
37	Ms. Deepika Gahlan	International Journal of Intelligent Transportation Systems Research,	Advanced modeling and interpretation for accurate intersection traffic time prediction international journal of intelligent transportation systems research		Scopus Indexed ESCI	https://link.springer.com/article/10.1007/s13177-024-00428-x	ISSN 1868-8659	01-10-2024
38	Ms. Deepika Gahlan	Engineering Research Express, IOP Science	Enhancing urban mobility predicting traffic congestion with optimized ML Model engineering research express		ESCI; Scopus Indexed	https://iopscience.iop.org/article/10.1088/2631-8695/ad8dbd	ISSN: 2631-8695	01-11-2024
39	Ms. Deepika Gahlan	Multimedia Tools and Applications (2025)	Prediction of traffic time using XGBoost model with hyperparameter optimization		SCI Web of Science, Scopus Indexed	https://link.springer.com/article/10.1007/s11042-025-20646-z	ISSN: 1573-7721	06-02-2025
40	Dr. Praveen Arora	Nanotechnology Perceptions	Quantum Algorithms in NLP: Redefining Language Processing Paradigms	9	Scopus Indexed	file:///C:/Users/anjali/Downloads/80.pdf	ISSN - 1660-6795	01-11-2024
41	Dr. Manjot Kaur Bhatia	CINEFORUM	A Comparison of Particle Swarm Optimization and its Normalized Variant	7	UGC Care (Category-II); Web of Science	https://revistadecineforum.com/index.php/cf/article/view/134	ISSN: 0009-7039	01-09-2024
42	Dr. Deepti Sharma	Journal of Informatics Education & Research	Harnessing AI Chatbots for Personalized Learning : Implications and Strategies and Education	9	ABDC Category 'C'	https://jier.org/index.php/journal/article/view/1171/978	ISSN: 1526-4726	01-07-2024
43	Dr. Deepti Sharma	Journal of Informatics Education and Research	Voice Based Assistance for visually impaired individuals	9	Scopus Indexed	https://jier.org/index.php/journal/article/view/1230/1036	ISSN: 1526-4726	01-07-2024
44	Dr. Deepti Sharma	Journal of Informatics and Education Research	Managing Smart Cities and Communities Using Machine Learning/ Deep Learning Approaches based on Emerging Technology Trends: An Extensive Literature	9	ABDC Category 'C'	https://www.jier.org/index.php/journal/article/view/1925	ISSN 1526-4726	01-07-2024
45	Dr. Deepti Sharma	European Economic Letters	Smart Emotion Detection : An AI and IoT Approach to Speech Analysis	9	ABDC Category 'C'	https://eeet.org.uk/index.php/journal/article/view/2308/2079	ISSN 2323-5233	Dec-24



46	Dr. Deepti Sharma	International Journal of Humanities Education	Innovative Teaching Pedagogy to promote Green Learning in Technical Institutions	9	Scopus Indexed	https://www.cm-os-cgrn.org/cgrn/ijhe/issue-details.php?aid=394	ISSN: 2327-0063 (Print) ISSN: 2327-2457 (Online)	February 2025
47	Dr. Deepti Sharma	International Journal of Science, Mathematics and Technology Learning	Predictive Analytics in Renewable Energy: A case study of Solar and Wind Synergy	9	Scopus Indexed	https://www.thelearner-ijstl-cgrn.org/cgrn/issue-details.php?aid=516	ISSN: 2327-915X	12-03-2025
48	Dr. Deepti Sharma	International Journal of Science, Mathematics and Technology Learning	Virtual Reader for VIP (Visually Impaired Personnel)	9	Scopus Indexed	https://www.thelearner-ijstl-cgrn.org/cgrn/issue-details.php?aid=520	ISSN: 2327-915X	01-Mar-25
49	Dr. Swaty Wadhwa	SDG's Journal "Studies Review"	Navigating the Educational Landscape: Unveiling the Impact of Chat GPT in Teacher-Student Dynamics	3	Scopus Indexed	https://www.sdgstudies.org/magazine/article/view/12	ISSN 2966-0548	2024
50	Dr. Disha Grover	International Journal of Science, Mathematics & Technology	The Art of prompt engineering: shaping AI responses for Real life applications	2	Scopus Indexed	https://www.thelearner-ijstl-cgrn.org/cgrn/issue-details.php?aid=607	ISSN - 2327-915X	Jun-25
51	Dr. Disha Grover	Journal of European Economic Letter	Revolutionizing Mobility: Evolution, Technology, and the Future of Electric Vehicles (EVs) in India with Data Analysis of EV Sales in India Using Python Libraries	2	ABDC Category 'C'		ISSN -2323-5233	45474
52	Dr. Disha Grover	Journal of Informatics and Education Research	Navigating the Ethical Divide: A Comparative Analysis of Ethical and Unethical uses of Generative AI	2	ABDC Category 'C'	https://ijer.org/index.php/journal/article/view/1897	ISSN 1526-4726	Dec-24
53	Dr. Disha Grover	Journal European Economic Letters	Data Science Journey: Past, Present, and the Path Ahead	2	ABDC Category 'C'	https://www.eeet.org.uk/index.php/journal/article/view/2414/2231	ISSN: 2323-5233	Jan-25
54	Dr. Disha Grover	International Journal of Science	Transforming Data Engineering : The Impact of Microsoft Fabric on Modern Data Workflows	2	ABDC Category 'C'	https://doi.org/10.5281/zenodo.14921195	ISSN: 2327-7971	Feb-25
55	Ms. Bhavna Galhotra	Journal of Informatics Education and Research	A Security Framework for M-Commerce Applications using VR/AR Technologies	7	ABDC Category 'C'	https://ijer.org/index.php/journal/article/view/2061	ISSN 1526-4726	
56	Ms. Bhavna Galhotra	International Journal of Science, Mathematics and Technology Learning	Identifying factors, eliminating gaps and conquering barriers in the elderly population of india's adoption of digital technology	7	Scopus Indexed	https://www.thelearner-ijstl-cgrn.org/cgrn/issue-details.php?pid=527	ISSN: 2327-915X (Online)	Apr-25
57	Mr. Sunny Seth	International Journal of Science, Mathematics and Technology Learning	Identifying factors, eliminating gaps and conquering barriers in the elderly population of india's adoption of digital technology	6	Scopus Indexed	https://www.thelearner-ijstl-cgrn.org/cgrn/issue-details.php?pid=527	ISSN: 2327-915X (Online)	Apr-25
58	Ms. Manju Arora	International Journal of Science, Engineering and Technol	Black Friday Sales Prediction using Machine Learning: An Overview"		ABDC Category 'C'	https://www.ijset.in/wp-content/uploads/IJSET_V12_issue3_616.pdf	ISSN: 2348-4098	01-07-2024
59	Dr. Parminder Bajaj	Research in International Business and Finance (RIBAF)	Interconnectedness and return spillover among APEC currency exchange rates: A time-frequency analysis	5	ABDC Category 'C', Scopus Indexed Q1 and Web of Science	https://doi.org/10.1016/j.ribaf.2024.102572	Print ISSN: 0275-5319 Online ISSN: 1878-3384	Sept 11, 2024
60	Dr. Richa Dabas	Advances in Consumer Research	Digitalization, Decentralization, and the Future of Economic Coordination: A Conceptual Framework for Post-Platform Economies		ABDC Category 'C'	https://acr-journal.com/	ISSN (Print): 0098-9258	2025
61	Dr. Richa Dabas	Journal of Informatics and Research	Inclusive Entrepreneurship: How Equity and Diversity shape startups and Innovation - case study Analysis		ABDC Category 'C'	https://ijer.org/index.php/journal/article/view/2644/2157	ISSN: 1526-4726	2025



62	Mr. Ankur Tayal	Intelligent Decision Technologies, enables using fuzzy swara and fuzzy copras in indian construction . Intelligent decision technologies	3	ESCI; Scopus Indexed	https://content.iospress.com/articles/intelligent-decision-technologies/10.3233/INT-240459	ISSN 1875-8843	07-Jun-24
63	Mr. Ankur Tayal	International Journal of System Assurance Engineering and Management	3	ESCI; Scopus Indexed	https://link.springer.com/article/10.1007/s13198-024-02432-6	ISSN: 0976-4348	Aug-24
64	Mr. Ankur Tayal	International Journal of System Assurance Engineering and Management	3	ESCI; Scopus Indexed	https://link.springer.com/article/10.1007/s13198-025-02778-5	ISSN: 1797-1812	Apr-25
65	Ms. Megha Mohan	Journal of Information Systems Engineering and Management	2	Scopus Indexed	https://jsem-journal.com/index.php/journal/article/view/1302	e-ISSN: 2468-4376	08-01-2025
66	Ms. Megha Mohan	Education and Training	2	Scopus Indexed	https://doi.org/10.1108/ET-03-2024-0105	400912	2025
67	Ms. Megha Sharma	European Economic Letters		ABDC Category 'C'	https://eelet.org.uk/index.php/journal/article/view/3133/2803	ISSN 2323-5233	May-25
68	Ms. Megha Sharma	European Economic Letters		ABDC Category 'C'	https://www.eelet.org.uk/index.php/journal/article/view/3158	ISSN 2323-5233	May-25
69	Dr. Veena Panjiwani	Journal of Informatics and Research		ABDC Category 'C'	https://jier.org/index.php/journal/article/view/903	ISSN - 1526-4726	2024-25
70	Dr. Veena Panjiwani	European Economic Letters		ABDC Category 'C'	https://eelet.org.uk/index.php/journal/article/view/3153	ISSN 2323-5233	2025
71	Dr. Veena Panjiwani	Advances in Consumer Research		ABDC Category 'C'	https://acr-journal.com/	ISSN (Print): 0098-9258	2025
72	Dr. Sachin Sabharwal	Journal of Information Systems Engineering and Management		Scopus Indexed	https://jsem-journal.com/index.php/journal/article/view/1302	e-ISSN: 2468-4376	08-01-2025
73	Dr. Parminder Bajaj	Annual Research Journal of SCMS, Pune	5	UGC Care (Category-II)	Hard copy	ISSN 2348-0661	01-09-2024
74	Dr. Sonia Dhir	Indian Journal of Economy and Policy	None	UGC Care (Category-II)	Print publication	3049 1975	2024
75	Mr. Shailender	Library Progress International		SCOPUS	https://www.researchgate.net/publication/365178613_Psychological_Impact_of_Over-the-Top_OTT_Content_Consumption_An_Experimental_Research_Analysis	e-ISSN: 2320-317X, p-ISSN: 0970-1052	Oct-24
76	Mr. Shailender	Tuijin Jishu/Journal of Propulsion Technology		SCOPUS		ISSN: 1001-4055, Vol. 45 No. 2 (2024)	2024-25

A Systematic Analysis on Chatbot Information Security

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In recent years, chatbots have grown in popularity, but they also pose security threats and weaknesses that require attention. This systematic literature analysis reviews the prior work on information security in chatbots, highlighting potential vulnerabilities, suggested countermeasures, and prospective future research approaches. According to the analysis, there are a number of security risks that chatbots must guard against, including malicious input, user profiling, contextual attacks, and data breaches. However, these problems may be addressed with the help of organizational controls, end-to-end encryption, and blockchain technology. The evaluation also emphasizes how crucial it is to uphold user confidence and allay privacy worries in order for chatbots to be adopted and used successfully in the future. This review's taxonomy offers a helpful framework for classifying the papers and their findings.

Keywords: Chatbot; information security; systematic literature review (SLR); ChatGPT; security

1. Introduction

Conversational agents are another name for chatbots[1]. They are software applications that use artificial intelligence, natural language processing, and machine learning to mimic human speech[2]. A wide range of businesses and applications, including e-commerce, healthcare, banking, and education, have benefited from the emergence of chatbots by becoming more convenient and effective. However, as these systems spread more widely, they also become more open to various security risks and intrusions, which raises questions about the security and privacy of critical user data[3].

Information security has actually drawn more attention recently [4, 5]. The safeguarding of users' private information is one of the main information security concerns faced by chatbots [6, 7,8,9,10,11]. The quantity of personal information exchanged by chatbots, including financial data, health information, and personally identifiable information, is growing as they are utilized more often across a variety of sectors and applications. This makes them a desirable target for fraudsters, who might try to utilize chatbot weaknesses to get access to customer data without authorization.

For instance, if a healthcare chatbot is breached, an attacker might have access to private patient data like medical records, prescriptions, and other details. Similar to the previous example, if a finance chatbot is compromised [12,13], an attacker may obtain user financial information, including credit card numbers, bank account information, and transaction history. The requirement to uphold user confidence and trust in these systems is a crucial component of chatbot information security[6,7,8,9,14,15,16,17,18]. When using chatbots, users must have faith that their personal information is safe and secured. Trust among users can be damaged by a security lapse or data leak, which can have serious repercussions for companies and organizations who employ chatbots to offer customer service and assistance.

For instance, the businesses impose secret regulations in the terms and conditions and disclaimers of the website to obtain user agreement to use their data. Companies in this situation are legally permitted to store personal data. However, it's possible that the user is unaware that their data has been shared with outside parties [19, 20]. The fact that older adults appear to behave differently than younger adults when selecting a chatbot for customer assistance as opposed to connecting to a live agent is another factor to take into particular account for consumer trust [21,22]. Although they make up a sizable portion of the population, older folks may still value human interaction more than chatbots, which means that relying primarily or mostly on chatbot communication risks alienating this market [23].

“Smart Emotion Detection: An AI and IoT Approach to Speech Analysis”

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Abstract

In order to evaluate and interpret emotional states from voice signals in real-time, this study offers an AI-driven speech emotion detection system that makes use of Internet of Things (IoT) technologies. Intelligent systems that can comprehend human emotions are becoming more and more necessary as AI and IoT merge. These systems can improve user experience in a variety of applications, such as adaptive learning environments and mental health monitoring. After extracting pertinent features from audio samples using sophisticated signal processing techniques, the suggested system implements machine learning models such as subtle displays of emotion. IoT integration makes it easier to collect and process data in real time, proving the system's usefulness. Future advancements in emotion detection and analysis are made possible by this research, which helps create AI systems that are more sensitive and adaptive.

Keywords: Speech Emotion Recognition, AI Technology, Machine Learning, Natural Language Processing (NLP), Emotion Analysis, Voice Analytics, Sentiment Analysis, Real-time Detection, Emotion Classification, Deep Learning, Audio Processing, Multimodal Emotion Detection, Human-Computer Interaction, Data Annotation, Emotion Database, Feature Extraction, Speech Signal Processing, Contextual Understanding, User Experience Enhancement

I. INTRODUCTION

Speech is a fundamental mode of human statement that conveys not only language content but also a wealth of emotional information. Speech Emotion Recognition (SER) is the capacity to identify emotions from speech cues has profound implications across various domains including human-computer interaction, healthcare, education, and entertainment. Emotion recognition systems enable machines to perceive and respond to human emotions, thereby enhancing the quality and effectiveness of interactions in these domains. Understanding human emotions from speech is crucial for developing empathetic and responsive artificial intelligence systems. Emotion-aware systems in human-computer interaction can modify their replies according to the user's emotional state, resulting in more tailored and efficient interactions. For instance, in virtual assistants or customer service applications, recognizing frustration or satisfaction in a user's voice can tailor responses to better meet their needs. In healthcare, SER systems can aid in the early detection and monitoring of emotional disorders such as depression or anxiety by analysing speech patterns indicative of emotional distress. Educational applications can benefit from emotion-aware tutoring systems that adjust teaching strategies based on student engagement and emotional responses. Moreover, in entertainment and media, SER systems contribute to enhancing user experiences by personalizing content recommendations or adapting storytelling based on audience emotional feedback.

Early approaches to SER relied on handcrafted features extracted from speech signals, such as pitch, intensity, and spectral characteristics, combined with machine learning classifiers like Support Vector Machines (SVM) or Gaussian Mixture Models (GMM). These methods achieved moderate success but often struggled with capturing complex emotional nuances and variations across different speakers and contexts. Recent advancements in Artificial Intelligence and Internet of Things (IoT), particularly deep learning techniques, have revolutionized SER by enabling end-to-end learning directly from raw speech data. This research paper aims to develop an AI-driven speech emotion detection system that leverages IoT technologies for real-time emotion recognition. By implementing advanced machine learning algorithms, including Support Vector Machines (SVM), Random Forest, Convolutional Neural Networks (CNN), and Long Short-Term Memory (LSTM) networks, the study seeks to improve the accuracy and reliability of emotion detection from speech. Ultimately, this system aspires to enhance user experiences by providing a deeper understanding of emotional states, thereby contributing to a more empathetic and responsive technological landscape.

A. Aims of the Research

The primary objective of this research is to develop a robust Speech Emotion Recognition system using CNNs and evaluate its performance across standard benchmark datasets. Specifically, we aim to:

- 1. Develop an AI-driven System:** To design and implement a robust speech emotion detection system that leverages artificial intelligence techniques and IoT technologies, facilitating real-time analysis of emotional states from spoken language.
- 2. Enhance Emotion Recognition Accuracy:** To explore and evaluate various machine learning and deep learning algorithms, including Support Vector Machines (SVM), Random Forest, Convolutional Neural Networks (CNN), and Long





Interconnectedness and return spillover among APEC currency exchange rates: A time-frequency analysis

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Highlights

- COVID-19 (87.18%) had severely impacted than Russia-Ukraine war (79.49%), and Silicon Valley Bank collapse (75.55%).
- During crisis, APEC currency exchange rates pairs tend to form contagion.
- South Korean won, Thai Bhat, Australian Dollar are identified as consistent shock transmitters.
- Malaysian Ringgit, Philippine peso, Indonesian Rupiah, Chinese Yuan are consistent shock receiver in the time domain.

Abstract

By combining TVP-VAR Model (time domain connectedness) and TVP-VAR based Baruník and Křehlík model (frequency domain connectedness), this study analyzes the impact of the COVID-19 pandemic, the Russia-Ukraine war, and the Silicon Valley Bank (SVB) collapse on the Asia Pacific Economic Cooperation (APEC) forum currency exchange rates. The results reveal that APEC



Enhancing Chameleon Swarm Optimization Algorithm with Galois Method for Improved Test Case Selection

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Abstract

By locating the best potential solutions within predetermined search regions, optimization algorithms are crucial for resolving challenging real-world issues. By simulating the collective behavior of biological systems, nature-inspired swarm optimization algorithms have demonstrated impressive performance in challenging search settings. The Chameleon Swarm Optimization Algorithm (CSOA) is one of them that has drawn interest due to its capacity for dynamic exploration and exploitation. However, CSOA is prone to local optima and has delayed convergence. In order to increase search dynamics, this work suggests an improved version of CSOA called the Galois-enhanced Chameleon Swarm Optimization Algorithm (G-GSOA), which incorporates Galois field transformations. The Galois technique improves search speed and solution accuracy by introducing organized randomization through modular arithmetic. The "data_race_bugs" dataset was used to evaluate the suggested G-GSOA model in order to optimize the selection of test cases. According to experimental results, G-GSOA performs better than other algorithms, including GOA, GWOA, HHOA, and CSOA, in terms of robustness, fitness value, and convergence rate. G-GSOA's improved search capabilities make it a viable option for challenging optimization issues in high-dimensional search spaces, such as software testing.

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