KONGU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

Affiliated to Bharathiar University, Coimbatore

Approved by UGC & AICTE, New Delhi& Re-accredited by NAAC

(An ISO 9001:2015 Certified Institution)

NANJANAPURAM, ERODE – 638 107

DEPARTMENT OF COMPUTER SCIENCE (U.G)

Department recognized under Star College Scheme

Funded by the Department of Biotechnology, Govt. of India, New Delhi

ANNUAL REPORT (2023 -2024)

KONGU ARTS AND SCIENCE COLLEGE (AUTONOMOUS), ERODE – 638107

DBT STAR COLLEGE SCHEME PROGRAMME

DEPARTMENT OF COMPUTER SCIENCE (UG)

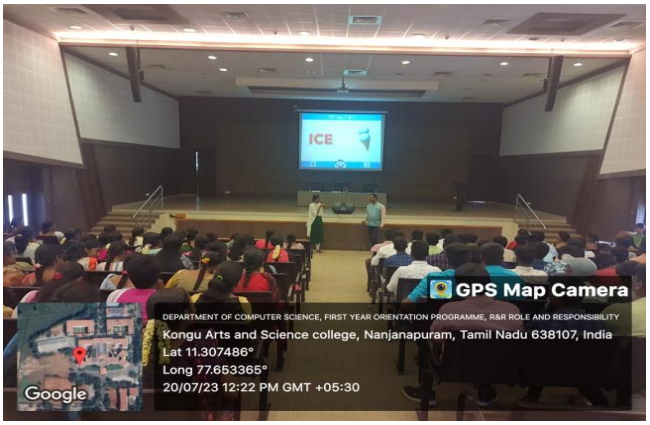
ANNUAL REPORT - 2023 – 2024

(June 2023 to Feb 2024)

Student Induction Programme for First Year B.Sc (Computer Science) and B.Sc (Computer Science with Data Analytics) Students was conducted on 26.06.2023 (AN) at Main Block Class Rooms No. 306, 307 & 308 with 165 student participants.

The Cyber Prodigies Forum (CPF) of Computer Science (UG) department had organized a session on "Efficient Programming and Debugging" for the First Year B.Sc (Computer Science) students on 14.07.2023 (Friday).

Orientation Programme for I B.Sc (Computer Science) and I B.Sc (Computer Science with Data Analytics) Students was conducted on 20.07.2023 (FN) at U.V.Swaminatha Iyer Arangam with 161 student participants. The session was handled by Mr. K.A. Kannan, HR Trainer, Psychologist, Mayiladuthurai.



Orientation Programme for I B.Sc (Computer Science) and I B.Sc (Computer Science with Data Analytics) Students was conducted on 20.07.2023 (AN) at Auditorium with 161 student participants. The session was handled by Ms. S. Umamaheswari, Trainer, Mana Vala Kalai Mandram, Erode.

Cyber Crews Students Association Inaugural and Orientation Programme for the B.Sc (Computer Science) and B.Sc (Computer Science with Data Analytics) students was organized on 21.07.2023 at UVS Hall. The session was handled by Mr.S.Suganesh (Alumnus), Business Analyst, Robosoft Technology, Karnataka as the Chief Guest.

Orientation Programme for I B.Sc (Computer Science) and I B.Sc (Computer Science with Data Analytics) Students was conducted on 21.07.2023 (AN) at U.V.Swaminatha Iyer Arangam with 155 student participants. The session was handled by Ms.V.Kanchana, Assistant Professor in English, KASC

Orientation Programme for I B.Sc (Computer Science) and I B.Sc (Computer Science with Data Analytics) Students was conducted on 21.07.2023 (AN) at U.V.Swaminatha Iyer Arangam with 155 student participants. The session was handled by Dr. P. Dhinakaran, HOD, Department of Tamil, KASC.

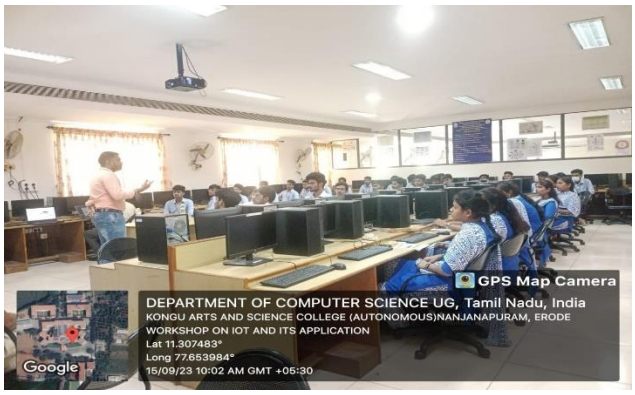
The Road Safety Awareness Programme was conducted by the Government of India on 28.07.2023 at Municipality Marriage Hall, Erode. Total of 75 Students and 03 faculty members of Computer Science department from our college has been participated and got awareness on Road Safety.

A Department of Computer Science (UG) has organized an Extension Activity on "Anti-Tobacco Awareness Rally" under DBT Star College Scheme on 11.08.2023 (Friday) to give awareness to B.Sc Computer Science and B.Sc (Computer Science with Data Analytics) Students.

Academic Industry Interface Programme – Guest Lecture on "Mobile Applications using Android studio" for Final Year B.Sc (CS) Students was conducted on 25.08.2023 (FN) at Silver Jubilee Seminar Hall with 83 student participants. The session was handled by Bernard Arockiam P, Corporate Trainer, Livewire, Chennai.

"THINKFEST" Intra Department Competitions - Preliminary round of "Quiz Contest" event was conducted on 14.09.2023 (Thursday) through online. 139 students have participated in the contest. 5 students have been selected for finals. The finals of "Quiz Contest" event were conducted on 21.09.2023 (Thursday) at Main Block 302.

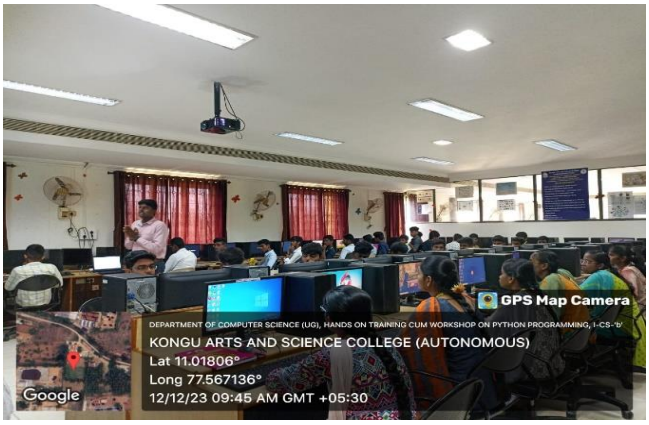
An Academic Industry Interface Programme - Hands on Training cum workshop on “IoT and its Applications” for Final Year Students of B.Sc (Computer Science) was conducted on 14.09.2023 and 15.09.2023 with 115 student participants. The session was handled by Mr.Jeeva K and Mr. Rajamanickam T, Software Engineers, RubRich Research, Coimbatore.



Kasc have signed a MOU with SRMV to provide support and collaboration for the exchange of Faculty Members for the enrichment and sharing of knowledge. In this regards, Dr.J.YESUDOSS, Assistant Professor, Sri Ramakrishna Mission Vidyalaya College of Arts and Science (Autonomous), Coimbatore shared his knowledge in Software Engineering for first year students from 20.09.2023 to 22.09.2023

A Hands on Training cum Workshop on “Computer Hardware and Networking” for First Year Students of B.Sc (Computer Science) and B.Sc (Computer Science with Data Analytics) was conducted from 20.09.2023 to 22.09.2023 with 147 student participants. The session was handled by Mr. P.Manikandan, Proprietor, Sridharan Infotech, Erode.

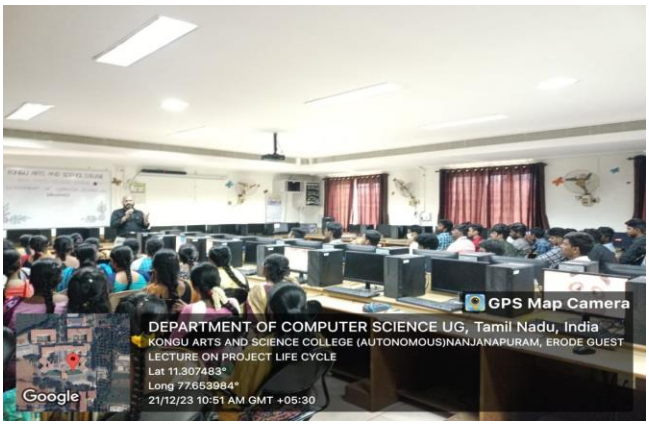
An Academic Industry Interface Programme -Hands on Training cum Workshop on “Python Programming” for First Year B.Sc(Computer Science)and First Year B.Sc(CS with DA) students was conducted from 11.12.2023 to 13.12.2023 with 161 student participants. The session was handled by Viknesh Sankaran, Technical Lead, Livewire Corporate Office, Chennai



An Academic Industry Interface Programme -Guest Lecture on “Project Development using IoT” for Final Year B.Sc(Computer Science) Students was conducted on 15.12.2023 with 80 student participants. The session was handled by Mr.Jeeva K, Software Engineer, RubRich Research, Coimbatore.

A Seminar on “International Career Opportunities after Graduation” for Final Year B.Sc (Computer Science) students was conducted on 18.12.2023 with 82 student participants. The session was handled by Mr.Sayed Osama, HR, Staar Uniadvise Private Limited, Mumbai.

Academic Industry Interface Programme - Guest Lecture on “Life Cycle Models in Project Development” for Final Year B.Sc(Computer Science) Students was conducted on 21.12.2023 with 72 student participants. The session was handled by Mr.L.Askger Ali, Software Developer, Sun Software Solutions, Coimbatore.



Guest Lecture on “Project Management Resources using IoT” for Final Year B.Sc(Computer Science) Students was conducted on 22.12.2023 with 70 student participants. The session was handled by Mr. M.Karthikeyan, Hardware Technician Lead, Phoenix Solution, Erode.

The Cyber Prodigies Forum (CPF) of Computer Science (UG) department had organized a session on “Multimedia Presentation and Web Designing” for the II B.Sc Computer Science & II B.Sc (Computer Science with Data Analytics) students on 22.12.2023 (Friday).

A Department of Computer Science (UG) has organized a DBT Sponsored Extension Activity on "ANIMATION IN MULTIMEDIA" under DBT Star College Scheme to give IT awareness to Panchayat Union Primary School Students, Nathakattu Palayam on 02.02.2024 (Friday).

A Department of Computer Science (UG) has organized a DBT Sponsored Extension Activity on "Plastic Ban Awareness Rally" under DBT Star College Scheme to give awareness to Panchayat Union Primary School Students and Public in Nathakattu Palayam.

A Department of Computer Science (UG) has organized a DBT Sponsored Extension Activity on "Awareness Programme on E-Waste Management" under DBT Star College Scheme to give awareness to Panchayat Union Primary School Students and Public in Nathakattu Palayam.

The Cyber Prodigies Forum (CPF) of Computer Science (UG) department had organized a session on "Paper Presentation and Marketing" for the III B.Sc Computer Science students on 09.02.2024 (Friday). The faculty trainers Dr. R. Pushpalatha, Dr. M. Shanmugapriya and Ms. A. Elakkiya have expounded the guidelines for paper presentation and provided the importance of the marketing in business infrastructure.

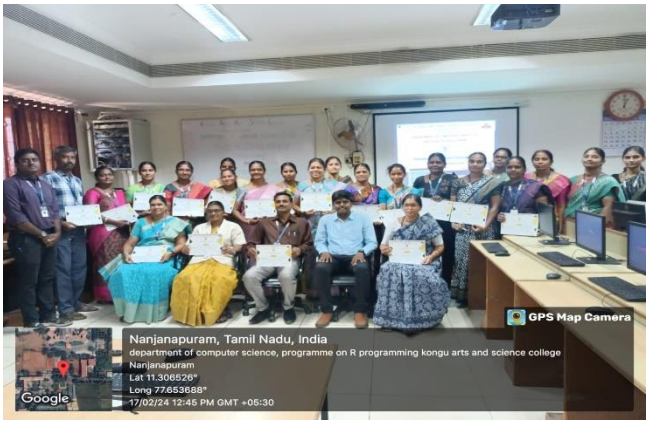
OVERALL CHAMPIONSHIP (KONGU CULTURAL FEST'24 & PONGAL VIZHA)

The Student Team representing the Department of Computer Science (UG) has won the "Overall Championship Trophy – Winners" in the cultural competitions "KONGU CULTURAL FEST – 2024" conducted by our college on 24.01.2024.

The Student Team representing the Department of Computer Science (UG) has emerged as "Pongal Vizha Contest – Winners" in the competitions conducted by our college on 11.01.2024.

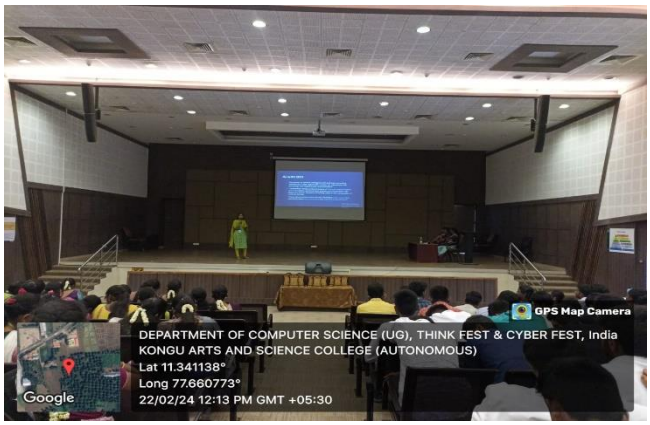
FACULTY DEVELOPMENT PROGRAMME

Faculty Development Programme on "R- Programming" for Faculty members of Computer Science Stream and Mathematics was conducted on 17.02.2024 with 38 faculty participants. The session was handled by Vignesh S, Technical Lead & Corporate Trainer, Livewire Corporate Office, Chennai.



INTRA-MURAL MEETS

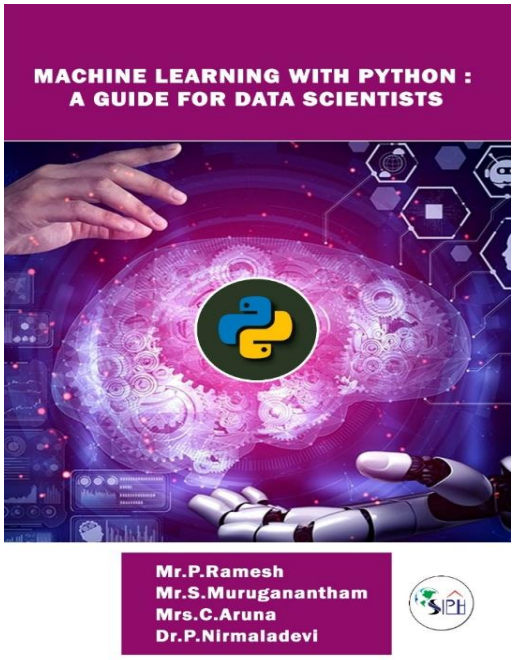
The Department of Computer Science (UG) Conducted 'Think Fest' – Intradepartment Competitions on "Quiz, Poster Presentation and Paper Presentation" for the students.

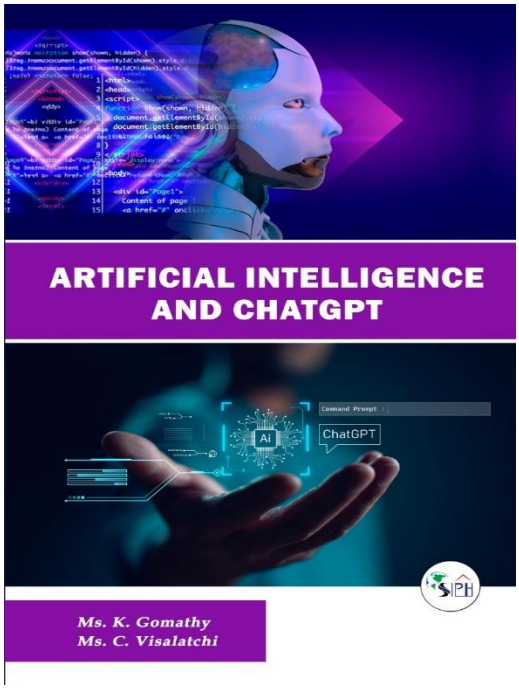


The Department of Computer Science (UG) Conducted 'Cyber Fest' – Intradepartment Cultural Competition on 22.02.2024 for the students.

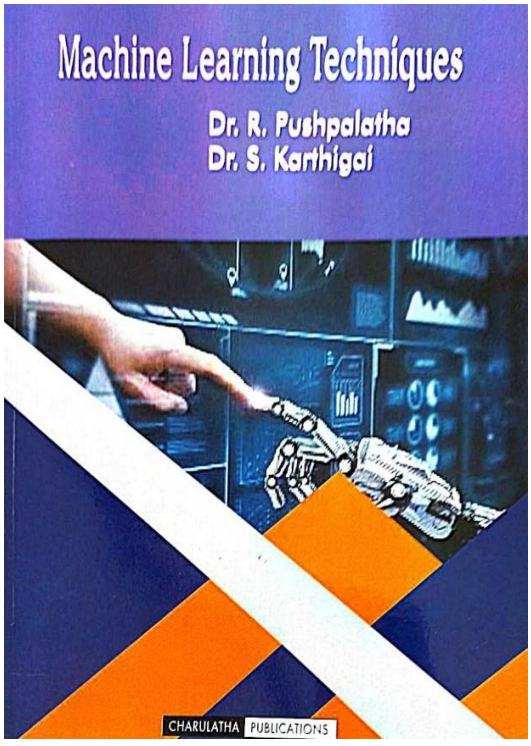
ACHIEVEMENTS OF FACULTY MEMBERS

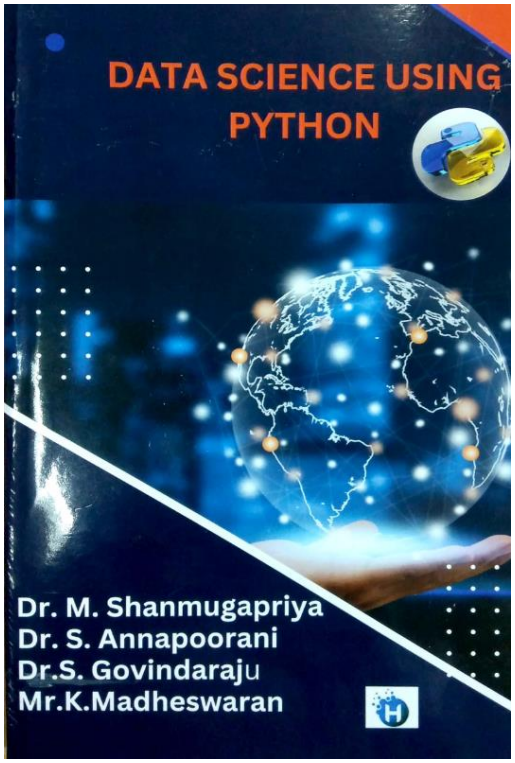
BOOK PUBLICATIONS





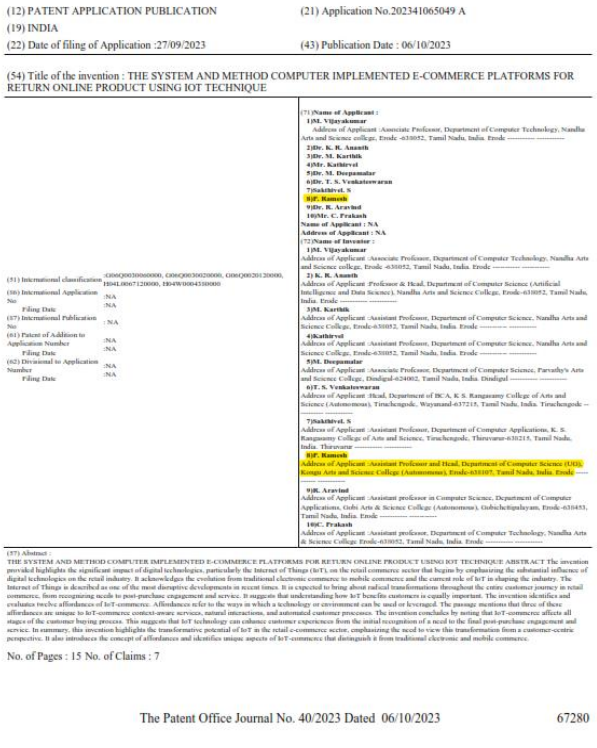
Mr.P.Ramesh - Nov 2023 Ms.K.Gomathy & Ms.C.Visalatchi – Feb 2024





Dr.R.Pushpalatha - Jan – 2024 Dr.M.Shanmugapriya - Jan – 2024

PATENT



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(43) Publication Date : 06/10/2023

(54) Title of the invention : THE SYSTEM AND METHOD COMPUTER IMPLEMENTED E-COMMERCE PLATFORMS FOR RETURN ONLINE PRODUCT USING IOT TECHNIQUE

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4)Dr. Karthivel
5)Dr. M. Deepamalar
6)Dr. T. S. Venkateswaran
7)Sakthivel. S
8)P. Ramesh
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10)Mr. C. Prakash
Name of Applicant : NA
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3)M. Karthik
4)Karthivel
5)M. Deepamalar
6)T. S. Venkateswaran
7)Sakthivel. S
8)P. Ramesh
9)R. Aravind
10)C. Prakash

(51) International classification :G06Q0030060000, G06Q0030020000, G06Q0020120000, H04L0067120000, H04W0004500000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(57) Abstract :
THE SYSTEM AND METHOD COMPUTER IMPLEMENTED E-COMMERCE PLATFORMS FOR RETURN ONLINE PRODUCT USING IOT TECHNIQUE ABSTRACT The invention provided highlights the significant impact of digital technologies, particularly the Internet of Things (IoT), on the retail commerce sector that begins by emphasizing the substantial influence of digital technologies on the retail industry. It acknowledges the evolution from traditional electronic commerce to mobile commerce and the current role of IoT in shaping the industry. The Internet of Things is described as one of the most disruptive developments in recent times. It is expected to bring about radical transformations throughout the entire customer journey in retail commerce, from recognizing needs to post-purchase engagement and service. It suggests that understanding how IoT benefits customers is equally important. The invention identifies and evaluates twelve affordances of IoT-commerce. Affordances refer to the ways in which a technology or environment can be used or leveraged. The passage mentions that three of these affordances are unique to IoT-commerce context-aware services, natural interactions, and automated customer processes. The invention concludes by noting that IoT-commerce affects all stages of the customer buying process. This suggests that IoT technology can enhance customer experiences from the initial recognition of a need to the final post-purchase engagement and service. In summary, this invention highlights the transformative potential of IoT in the retail e-commerce sector, emphasizing the need to view this transformation from a customer-centric perspective. It also introduces the concept of affordances and identifies unique aspects of IoT-commerce that distinguish it from traditional electronic and mobile commerce.

No. of Pages : 15 No. of Claims : 7

The Patent Office Journal No. 40/2023 Dated 06/10/2023 67280

Mr.P.Ramesh - Oct – 2023

12/23/23, 11:29 AM Intellectual Property India

Office of the Controller General of Patents, Designs & Trade Marks
Department of Industrial Policy & Promotion,
Ministry of Commerce & Industry,
Government of India

(http://ipindia.nic.in/index.htm)

INTELLECTUAL PROPERTY INDIA (http://ipindia.nic.in/index.htm)

Application Details	
APPLICATION NUMBER	202341077116
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	11/11/2023
APPLICANT NAME	1 . Dr. PRASATH S 2 . Dr. K S MOHANASATHIYA 3 . Dr. K SELVANAYAKI 4 . Dr. R PUSHPALATHA 5 . Dr. G D PRAVEEN KUMAR 6 . Dr S KARTHIGAI 7 . Dr. B ARIVAZHAGAN 8 . Dr M AMSAVENI 9 . Mr. M CHANDRU
TITLE OF INVENTION	MACHINE LEARNING BASED EDGE COMPUTING SCHEDULE
FIELD OF INVENTION	COMPUTER SCIENCE
E-MAIL (As Per Record)	softprasaths@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	22/12/2023

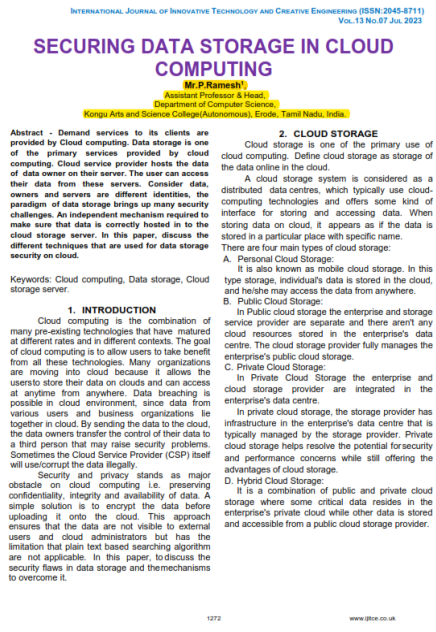
Application Status

https://iprsearch.ipindia.gov.in/PatentSearch/PatentSearch/ViewApplicationStatus 1/2

Dr.R.Pushpalatha - Dec – 2023

RESEARCH PAPER PUBLICATIONS

- 05 Faculty Members have published 09 Research Papers in UGC Care and various peer reviewed international journals with high impact factors and Scopus indexed.



International Journal of Innovative Technology and Creative Engineering (ISSN:2045-8711)
Vol.13 No.07 Jul. 2023

SECURING DATA STORAGE IN CLOUD COMPUTING

Mr.P.Ramesh[1],
Assistant Professor & Head,
Department of Computer Science,
Kongu Arts and Science College(Autonomous), Erode, Tamil Nadu, India.

Abstract - Demand services to its clients are provided by Cloud computing. Data storage is one of the primary services provided by cloud computing. Cloud service provider hosts the data of data owner on their server. The user can access their data from these servers. Consider data, owners and servers are different identities, the paradigm of data storage brings up many security challenges. An independent mechanism required to make sure that data is correctly hosted in to the cloud storage server. In this paper, discuss the different techniques that are used for data storage security on cloud.

Keywords: Cloud computing, Data storage, Cloud storage server.

1. INTRODUCTION

Cloud computing is the combination of many pre-existing technologies that have matured at different rates and in different contexts. The goal of cloud computing is to allow users to take benefit from all these technologies. Many organizations are moving into cloud because it allows the users to store their data on clouds and can access at anytime from anywhere. Data breaching is possible in cloud environment, since data from various users and business organizations lie together in cloud. By sending the data to the cloud, the data owners transfer the control of their data to a third person that may raise security problems. Sometimes the Cloud Service Provider (CSP) itself will use/corrupt the data illegally.

Security and privacy stands as major obstacle on cloud computing i.e. preserving confidentiality, integrity and availability of data. A simple solution is to encrypt the data before uploading it onto the cloud. This approach ensures that the data are not visible to external users and cloud administrators but has the limitation that plain text based searching algorithm are not applicable. In this paper, to discuss the security flaws in data storage and the mechanisms to overcome it.

2. CLOUD STORAGE

Cloud storage is one of the primary use of cloud computing. Define cloud storage as storage of the data online in the cloud.

A cloud storage system is considered as a distributed data centres, which typically use cloud-computing technologies and offers some kind of interface for storing and accessing data. When storing data on cloud, it appears as if the data is stored in a particular place with specific name.

There are four main types of cloud storage:

A. Personal Cloud Storage:
It is also known as mobile cloud storage. In this type storage, individual's data is stored in the cloud, and he/she may access the data from anywhere.

B. Public Cloud Storage:
In Public cloud storage the enterprise and storage service provider are separate and there aren't any cloud resources stored in the enterprise's data centre. The cloud storage provider fully manages the enterprise's public cloud storage.

C. Private Cloud Storage:
In Private Cloud Storage the enterprise and cloud storage provider are integrated in the enterprise's data centre.
In private cloud storage, the storage provider has infrastructure in the enterprise's data centre that is typically managed by the storage provider. Private cloud storage helps resolve the potential for security and performance concerns while still offering the advantages of cloud storage.

D. Hybrid Cloud Storage:
It is a combination of public and private cloud storage where some critical data resides in the enterprise's private cloud while other data is stored and accessible from a public cloud storage provider.

1272 www.ijitce.co.uk

Mr.P.Ramesh – July 2023

Home / Archives / Vol. 44 No. 5 (2023) / Articles

Comparative Analysis on Detection of Hate Speech / Offensive Language in Social Media

PDF

DOI: https://doi.org/10.52783/tjjpt.v44.i5.3505

Keywords:
Text Processing, Hate Speech, Social media, Offensive Language Detection, Natural Language Processing, Machine Learning, Multi-modal Hate Speech.

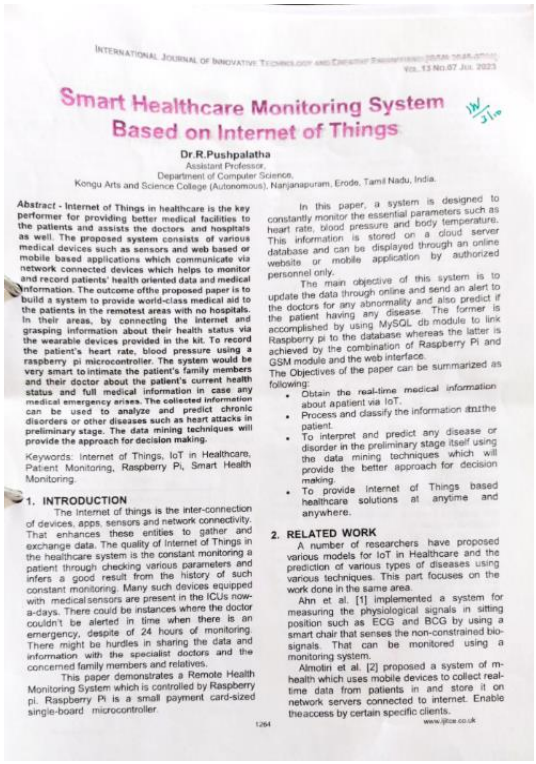
Ms. N. Zahira Jahan, Dr. R. Pushpalatha

Abstract

The identification of offensive language on social media platforms has been a subject of ongoing research in recent years. In countries where English is not the native language, social media users often employ a code-mixed style in their posts and comments on YouTube, Twitter, Facebook, etc. This introduces numerous challenges for tasks related to identifying offensive content, particularly in languages with low resources such as Tamil, Urdu, Malayalam, etc. In this study, we conduct a comparative analysis of the performance of various machine learning and natural language processing models to detect offensive content on social media platforms. In our analysis, language category, social media platform from which they got the dataset, methodology, models used, and finally identified the outperformed model and benefits of the research were tabulated. Finally, the best model was identified among the analyzed models.

Issue

Dr.R.Pushpalatha – Aug 2023



INTERNATIONAL JOURNAL OF INNOVATIVE TECHNOLOGY AND CREATIVE ENGINEERING (ISSN 2045-8711) Vol. 13 No.07 July 2023

Smart Healthcare Monitoring System Based on Internet of Things

Dr.R.Pushpalatha
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Department of Computer Science,
Kongu Arts and Science College (Autonomous), Nanjanapuram, Erode, Tamil Nadu, India.

Abstract - **Internet of Things in healthcare is the key performer for providing better medical facilities to the patients and assists the doctors and hospitals as well. The proposed system consists of various medical devices such as sensors and web based or mobile based applications which communicate via network connected devices which helps to monitor and record patients' health oriented data and medical information. The outcome ofthe proposed paper is to build a system to provide world-class medical aid to the patients in the remotest areas with no hospitals. In their areas, by connecting the internet and grasping information about their health status via the wearable devices provided in the kit. To record the patient's heart rate, blood pressure using a raspberry pi microcontroller. The system would be very smart to intimate the patient's family members and their doctor about the patient's current health status and full medical information in case any medical emergency arises. The collected information can be used to analyze and predict chronic disorders or other diseases such as heart attacks in preliminary stage. The data mining techniques will provide the approach for decision making.**

Keywords: Internet of Things, IoT in Healthcare, Patient Monitoring, Raspberry Pi, Smart Health Monitoring.

1. INTRODUCTION

The Internet of things is the inter-connection of devices, apps, sensors and network connectivity. That enhances these entities to gather and exchange data. The quality of Internet of Things in the healthcare system is the constant monitoring a patient through checking various parameters and infers a good result from the history of such constant monitoring. Many such devices equipped with medical sensors are present in the ICUs now-a-days. There could be instances where the doctor couldn't be alerted in time when there is an emergency, despite of 24 hours of monitoring. There might be hurdles in sharing the data and information with the specialist doctors and the concerned family members and relatives.

This paper demonstrates a Remote Health Monitoring System which is controlled by Raspberry pi. Raspberry Pi is a small payment card-sized single-board microcontroller.

In this paper, a system is designed to constantly monitor the essential parameters such as heart rate, blood pressure and body temperature. This information is stored on a cloud server database and can be displayed through an online website or mobile application by authorized personnel only.

The main objective of this system is to update the data through online and send an alert to the doctors for any abnormality and also predict if the patient having any disease. The former is accomplished by using MySQL db module to link Raspberry pi to the database whereas the latter is achieved by the combination of Raspberry Pi and GSM module and the web interface.

The Objectives of the paper can be summarized as following:

- Obtain the real-time medical information about apatient via IoT.
- Process and classify the information atnthe patient.
- To interpret and predict any disease or disorder in the preliminary stage itself using the data mining techniques which will provide the better approach for decision making.
- To provide Internet of Things based healthcare solutions at anytime and anywhere.

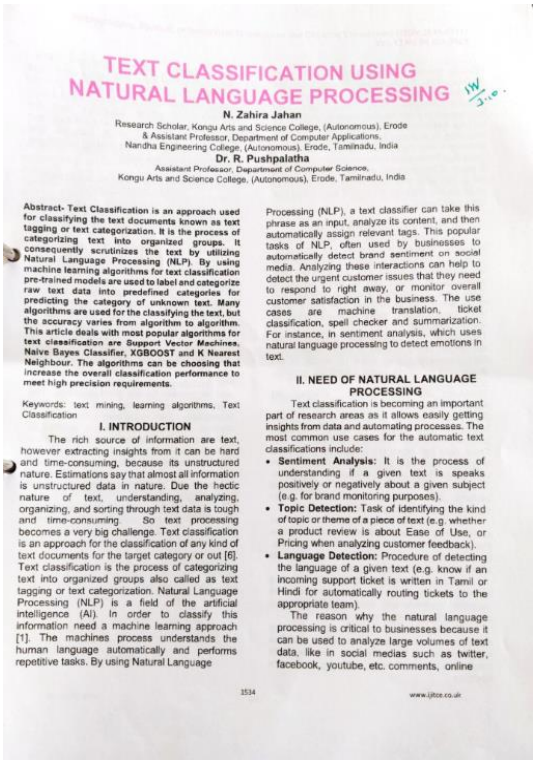
2. RELATED WORK

A number of researchers have proposed various models for IoT in Healthcare and the prediction of various types of diseases using various techniques. This part focuses on the work done in the same area.

Ahn et al. [1] implemented a system for measuring the physiological signals in sitting position such as ECG and BCG by using a smart chair that senses the non-constrained bio-signals. That can be monitored using a monitoring system.

Almotiri et al. [2] proposed a system of m-health which uses mobile devices to collect real-time data from patients in and store it on network servers connected to internet. Enable theaccess by certain specific clients.

Dr.R.Pushpalath – July 2023



TEXT CLASSIFICATION USING NATURAL LANGUAGE PROCESSING

N. Zahira Jahan
Research Scholar, Kongu Arts and Science College, (Autonomous), Erode
& Assistant Professor, Department of Computer Applications,
Nandha Engineering College, (Autonomous), Erode, Tamilnadu, India
Dr. R. Pushpalatha
Assistant Professor, Department of Computer Science,
Kongu Arts and Science College, (Autonomous), Erode, Tamilnadu, India

Abstract- Text Classification is an approach used for classifying the text documents known as text tagging or text categorization. It is the process of categorizing text into organized groups. It consequently scrutinizes the text by utilizing Natural Language Processing (NLP). By using machine learning algorithms for text classification pre-trained models are used to label and categorize raw text data into predefined categories for predicting the category of unknown text. Many algorithms are used for the classifying the text, but the accuracy varies from algorithm to algorithm. This article deals with most popular algorithms for text classification are Support Vector Machines, Naive Bayes Classifier, XGBOOST and K Nearest Neighbour. The algorithms can be choosing that increase the overall classification performance to meet high precision requirements.

Keywords: text mining, learning algorithms, Text Classification

I. INTRODUCTION

The rich source of information are text, however extracting insights from it can be hard and time-consuming, because its unstructured nature. Estimations say that almost all information is unstructured data in nature. Due the hectic nature of text, understanding, analyzing, organizing, and sorting through text data is tough and time-consuming. So text processing becomes a very big challenge. Text classification is an approach for the classification of any kind of text documents for the target category or out [6]. Text classification is the process of categorizing text into organized groups also called as text tagging or text categorization. Natural Language Processing (NLP) is a field of the artificial intelligence (AI). In order to classify this information need a machine learning approach [1]. The machines process understands the human language automatically and performs repetitive tasks. By using Natural Language Processing (NLP), a text classifier can take this phrase as an input, analyze its content, and then automatically assign relevant tags. This popular tasks of NLP, often used by businesses to automatically detect brand sentiment on social media. Analyzing these interactions can help to detect the urgent customer issues that they need to respond to right away, or monitor overall customer satisfaction in the business. The use cases are machine translation, ticket classification, spell checker and summarization. For instance, in sentiment analysis, which uses natural language processing to detect emotions in text.

II. NEED OF NATURAL LANGUAGE PROCESSING

Text classification is becoming an important part of research areas as it allows easily getting insights from data and automating processes. The most common use cases for the automatic text classifications include:

- **Sentiment Analysis:** It is the process of understanding if a given text is speaks positively or negatively about a given subject (e.g. for brand monitoring purposes).
- **Topic Detection:** Task of identifying the kind of topic or theme of a piece of text (e.g. whether a product review is about Ease of Use, or Pricing when analyzing customer feedback).
- **Language Detection:** Procedure of detecting the language of a given text (e.g. know if an incoming support ticket is written in Tamil or Hindi for automatically routing tickets to the appropriate team).

The reason why the natural language processing is critical to businesses because it can be used to analyze large volumes of text data, like in social medias such as twitter, facebook, youtube, etc. comments, online

Dr.R.Pushpalath – Sep 2023

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Comprehensive Assessment of the Effectiveness of the Dynamic Adaptive ARQ (DA-ARQ) Methodology for Packet Analysis

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Abstract: Traditional Karn's techniques, along with other techniques, could render the system unreliable because they provide a feedback mechanism to identify and correct errors. Increased error rates and decreased data integrity could come from this approach. Traditional Karn's method and other algorithms aren't likely to be able to manage an enormous number of users or adapt to shifting network circumstances, which could limit their potential to scale. This may reduce their utility in extensive networks. Inadequate security measures in the traditional Karn's algorithm, along with additional algorithms, could render them vulnerable to unauthorized access and data breaches. Since traditional Karn's method and other algorithms employ a constant retransmission rate, these techniques may not be ideal for changing network circumstances and have limited efficiency. As a consequence of this, it could result in greater delay, slower data transfer, and higher latency. The Dynamic Adaptive ARQ (DA-ARQ) method, which is more effective than the traditional Karn's method because it employs a dynamic approach to change the retransmission rate based on the network conditions, is the primary focus of this proposed survey paper. Overall, the DA-ARQ algorithm is more efficient, dependable, and secure than conventional Karn's method and other algorithms because of its dynamic and adaptive nature.

Keywords: Traditional Karn's Approach, Dynamic Adaptive ARQ (DA-ARQ), Retransmission Rate, Increased Error Rates

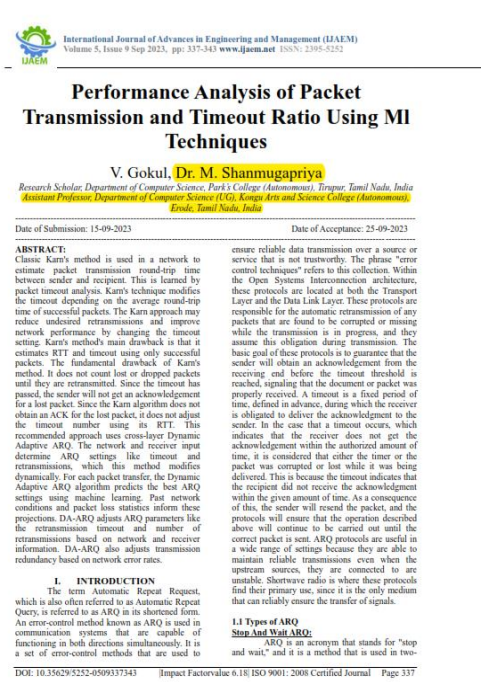
I. INTRODUCTION

A typical, easy-to-understand approach for packet retransmission in computer networks is the traditional Karn's algorithm. It is used when a packet needs to be retransmitted after being lost or damaged during transmission in order to maintain the integrity of its contents. Since it was created in the initial stages of computer networking, when network conditions were relatively stable and the number of network users was small, the traditional Karn's algorithm is regarded as an old technology. In these initial networks, which were distinguished by low capacity and high latency, packet loss and retransmission were issues that needed to be addressed. Sophisticated computer networks, however, have made the weaknesses of the traditional Karn's approach apparent. The high bandwidth, low latency, and numerous users that characterize modern networks can cause congestion and unpredictable network situations. Due to its reliance on a set retransmission rate that isn't always network condition-optimized, the traditional Karn's method may not be efficient in certain circumstances. Since other techniques for calculating packet timeout analysis rely on predefined timeout values that might not be ideal for network conditions, they might be regarded as obsolete. These specified timeouts can be predicated on network assumptions that aren't valid in practice, which would result in ineffective retransmissions and increased delay. For instance, fixed timeout values are dependent on the network's RTT or the quantity of retransmissions in the case of the Fixed Timeout (FTO) method and the Exponential Backoff (EB) algorithm, respectively. The dynamic nature of network circumstances, including variations in congestion levels or packet loss rates, isn't taken into consideration by these methods. Following are some conventional techniques for doing packet timeout analysis:

Karn's Algorithm: Depending on the predicted network round-trip time (RTT), this approach utilizes a preset timeout setting. The data packet is retransmitted if an acknowledgement (ACK) is not received until the timeout period ends, which is specified at a preset value.

Fixed Timeout (FTO) Algorithm: This technique makes use of a preset timeout value dependent on the network's RTT.

Dr.M.Shanmugapriya – July 2023



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Performance Analysis of Packet Transmission and Timeout Ratio Using MI Techniques

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Date of Submission: 15-09-2023 Date of Acceptance: 25-09-2023

ABSTRACT:
Classic Karn's method is used in a network to estimate packet transmission round-trip time between sender and recipient. This is learned by packet timeout analysis. Karn's technique modifies the timeout depending on the average round-trip time of successful packets. The Karn approach may reduce undesired retransmissions and improve network performance by changing the timeout setting. Karn's method's main drawback is that it estimates RTT and timeout using only successful packets. The fundamental drawback of Karn's method. It does not count lost or dropped packets until they are retransmitted. Since the timeout has passed, the sender will not get an acknowledgement for a lost packet. Since the Karn algorithm does not obtain an ACK for the lost packet, it does not adjust the timeout number using its RTT. This recommended approach uses cross-layer Dynamic Adaptive ARQ. The network and receiver input determine ARQ settings like timeout and retransmissions, which this method modifies dynamically. For each packet transfer, the Dynamic Adaptive ARQ algorithm predicts the best ARQ settings using machine learning. Past network conditions and packet loss statistics inform these projections. DA-ARQ adjusts ARQ parameters like the retransmission timeout and number of retransmissions based on network and receiver information. DA-ARQ also adjusts transmission redundancy based on network error rates.

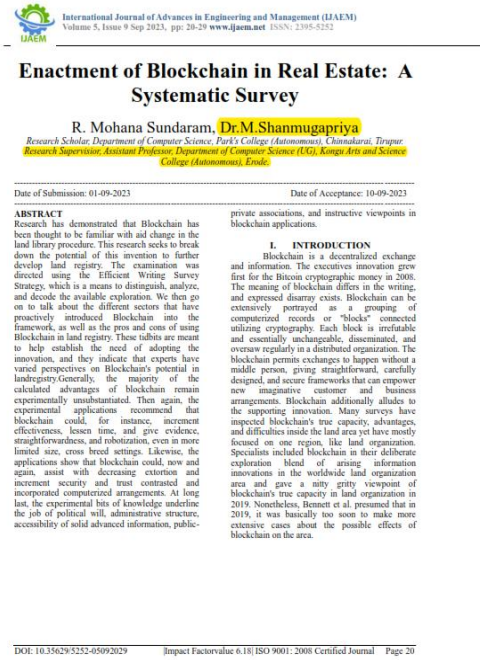
I. INTRODUCTION

The term Automatic Repeat Request, which is also often referred to as Automatic Repeat Query, is referred to as ARQ in its shortened form. An error-control method known as ARQ is used in communication systems that are capable of functioning in both directions simultaneously. It is a set of error-control methods that are used to ensure reliable data transmission over a source or service that is not trustworthy. The phrase "error control techniques" refers to this collection. Within the Open Systems Interconnection architecture, these protocols are located at both the Transport Layer and the Data Link Layer. These protocols are responsible for the automatic retransmission of any packets that are found to be corrupted or missing while the transmission is in progress, and they assume this obligation during transmission. The basic goal of these protocols is to guarantee that the sender will obtain an acknowledgement from the receiving end before the timeout threshold is reached, signaling that the document or packet was properly received. A timeout is a fixed period of time, defined in advance, during which the receiver is obligated to deliver the acknowledgment to the sender. In the case that a timeout occurs, which indicates that the receiver does not get the acknowledgement within the authorized amount of time, it is considered that either the timer or the packet was corrupted or lost while it was being delivered. This is because the timeout indicates that the recipient did not receive the acknowledgment within the given amount of time. As a consequence of this, the sender will resend the packet, and the protocols will ensure that the operation described above will continue to be carried out until the correct packet is sent. ARQ protocols are useful in a wide range of settings because they are able to maintain reliable transmissions even when the upstream sources, they are connected to are unstable. Shortwave radio is where these protocols find their primary use, since it is the only medium that can reliably ensure the transfer of signals.

1.1 Types of ARQ

Stop And Wait ARQ:

ARQ is an acronym that stands for "stop and wait," and it is a method that is used in two-



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Enactment of Blockchain in Real Estate: A Systematic Survey

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Date of Submission: 01-09-2023 Date of Acceptance: 10-09-2023

ABSTRACT

Research has demonstrated that Blockchain has been thought to be familiar with aid change in the land library procedure. This research seeks to break down the potential of this invention to further develop land registry. The examination was directed using the Efficient Writing Survey Strategy, which is a means to distinguish, analyze, and decode the available exploration. We then go on to talk about the different sectors that have proactively introduced Blockchain into the framework, as well as the pros and cons of using Blockchain in land registry. These tidbits are meant to help establish the need of adopting the innovation, and they indicate that experts have varied perspectives on Blockchain's potential in landregistry.Generally, the majority of the calculated advantages of blockchain remain experimentally unsubstantiated. Then again, the experimental applications recommend that blockchain could, for instance, increment effectiveness, lessen time, and give evidence, straightforwardness, and robotization, even in more limited size, cross breed settings. Likewise, the applications show that blockchain could, now and again, assist with decreasing extortion and increment security and trust contrasted and incorporated computerized arrangements. At long last, the experimental bits of knowledge underline the job of political will, administrative structure, accessibility of solid advanced information, public-private associations, and instructive viewpoints in blockchain applications.

I. INTRODUCTION

Blockchain is a decentralized exchange and information. The executives innovation grew first for the Bitcoin cryptographic money in 2008. The meaning of blockchain differs in the writing, and expressed disarray exists. Blockchain can be extensively portrayed as a grouping of computerized records or "blocks" connected utilizing cryptography. Each block is irrefutable and essentially unchangeable, disseminated, and oversaw regularly in a distributed organization. The blockchain permits exchanges to happen without a middle person, giving straightforward, carefully designed, and secure frameworks that can empower new imaginative customer and business arrangements. Blockchain additionally alludes to the supporting innovation. Many surveys have inspected blockchain's true capacity, advantages, and difficulties inside the land area yet have mostly focused on one region, like land organization. Specialists included blockchain in their deliberate exploration blend of arising information innovations in the worldwide land organization area and gave a nitty gritty viewpoint of blockchain's true capacity in land organization in 2019. Nonetheless, Bennett et al. presumed that in 2019, it was basically too soon to make more extensive cases about the possible effects of blockchain on the area.

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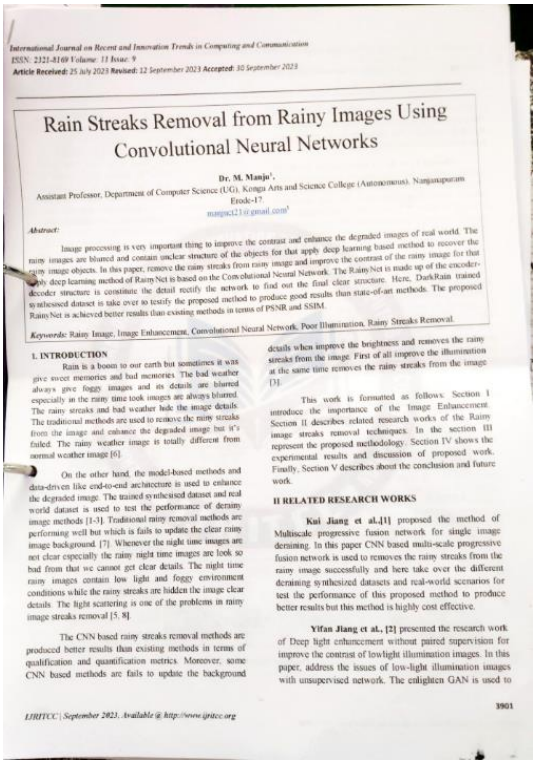
Dr.M.Shanmugapriya – Sep 2023



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Rain Streaks Removal from Rainy Images Using Convolutional Neural Networks

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Abstract:

Image processing is very important thing to improve the contrast and enhance the degraded images of real world. The rainy images are blurred and contain unclear structure of the objects for that apply deep learning based method to recover the rainy images objects. In this paper, remove the rainy streaks from rainy image and improve the contrast of the rainy image for that apply deep learning method of RainyNet is based on the Convolutional Neural Network. The RainyNet is made up of the encoder-decoder structure is constitute the detail rectify the network to find out the final clear structure. Here, DarkRain trained synthesised dataset is take over to testify the proposed method to produce good results than state-of-art methods. The proposed RainyNet is achieved better results than existing methods in terms of PSNR and SSIM.

Keywords: Rainy Image, Image Enhancement, Convolutional Neural Network, Poor Illumination, Rainy Streaks Removal.

I. INTRODUCTION

Rain is a boom to our earth but sometimes it was give sweet memories and bad memories. The bad weather always give foggy images and its details are blurred especially in the rainy time took images are always blurred. The rainy streaks and bad weather hide the image details. The traditional methods are used to remove the rainy streaks from the image and enhance the degraded image but it's failed. The rainy weather image is totally different from normal weather image [6].

On the other hand, the model-based methods and data-driven like end-to-end architecture is used to enhance the degraded image. The trained synthesised dataset and real world dataset is used to test the performance of deraimy image methods [1-3]. Traditional rainy removal methods are performing well but which is fails to update the clear rainy image background. [7]. Whenever the night time images are not clear especially the rainy night time images are look so bad from that we cannot get clear details. The night time rainy images contain low light and foggy environment conditions while the rainy streaks are hidden the image clear details. The light scattering is one of the problems in rainy image streaks removal [5, 8].

The CNN based rainy streaks removal methods are produced better results than existing methods in terms of qualification and quantification metrics. Moreover, some CNN based methods are fails to update the background details when improve the brightness and removes the rainy streaks from the image. First of all improve the illumination at the same time removes the rainy streaks from the image [3].

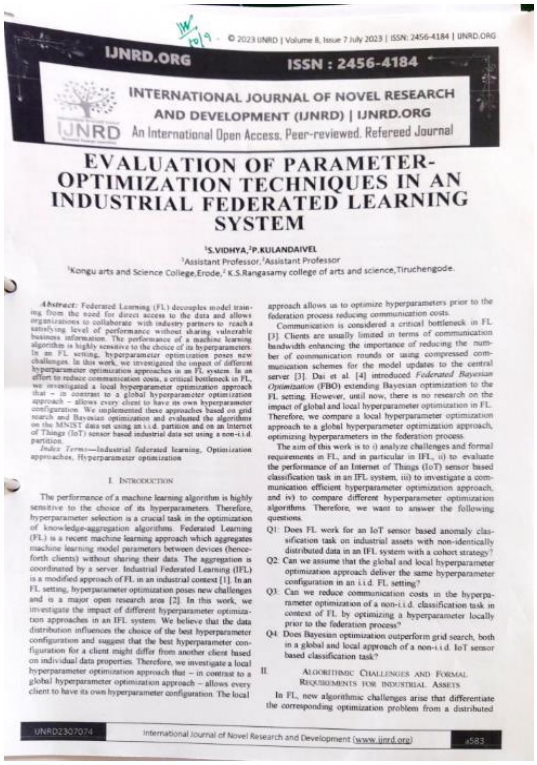
This work is formatted as follows: Section I introduce the importance of the Image Enhancement. Section II describes related research works of the Rainy image streaks removal techniques. In the section III represent the proposed methodology. Section IV shows the experimental results and discussion of proposed work. Finally, Section V describes about the conclusion and future work.

II RELATED RESEARCH WORKS

Kui Jiang et al.,[1] proposed the method of Multiscale progressive fusion network for single image deraining. In this paper CNN based multi-scale progressive fusion network is used to removes the rainy streaks from the rainy image successfully and here take over the different deraining synthesized datasets and real-world scenarios for test the performance of this proposed method to produce better results but this method is highly cost effective.

Yifan Jiang et al., [2] presented the research work of Deep light enhancement without paired supervision for improve the contrast of lowlight illumination images. In this paper, address the issues of low-light illumination images with unsupervised network. The enlighten GAN is used to

Dr.M.Manju – Sep 2023



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EVALUATION OF PARAMETER-OPTIMIZATION TECHNIQUES IN AN INDUSTRIAL FEDERATED LEARNING SYSTEM

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[1]Kongu arts and Science College,Erode,[2] K.S.Rangasamy college of arts and science,Tiruchengode.

Abstract: Federated Learning (FL) decouples model training from the need for direct access to the data and allows organizations to collaborate with industry partners to reach a satisfying level of performance without sharing vulnerable business information. The performance of a machine learning algorithm is highly sensitive to the choice of its hyperparameters. In an FL setting, hyperparameter optimization poses new challenges. In this work, we investigated the impact of different hyperparameter optimization approaches in an FL system. In an effort to reduce communication costs, a critical bottleneck in FL, we investigated a local hyperparameter optimization approach that – in contrast to a global hyperparameter optimization approach – allows every client to have its own hyperparameter configuration. We implemented these approaches based on grid search and Bayesian optimization and evaluated the algorithms on the MNIST data set using an i.i.d. partition and on an Internet of Things (IoT) sensor based industrial data set using a non-i.i.d. partition.

Index Terms—Industrial federated learning, Optimization approaches, Hyperparameter optimization

I. INTRODUCTION

The performance of a machine learning algorithm is highly sensitive to the choice of its hyperparameters. Therefore, hyperparameter selection is a crucial task in the optimization of knowledge-aggregation algorithms. Federated Learning (FL) is a recent machine learning approach which aggregates machine learning model parameters between devices (henceforth clients) without sharing their data. The aggregation is coordinated by a server. Industrial Federated Learning (IFL) is a modified approach of FL in an industrial context [1]. In an FL setting, hyperparameter optimization poses new challenges and is a major open research area [2]. In this work, we investigate the impact of different hyperparameter optimization approaches in an IFL system. We believe that the data distribution influences the choice of the best hyperparameter configuration and suggest that the best hyperparameter configuration for a client might differ from another client based on individual data properties. Therefore, we investigate a local hyperparameter optimization approach that – in contrast to a global hyperparameter optimization approach – allows every client to have its own hyperparameter configuration. The local approach allows us to optimize hyperparameters prior to the federation process reducing communication costs.

Communication is considered a critical bottleneck in FL [3]. Clients are usually limited in terms of communication bandwidth enhancing the importance of reducing the number of communication rounds or using compressed communication schemes for the model updates to the central server [3]. Dai et al. [4] introduced *Federated Bayesian Optimization* (FBO) extending Bayesian optimization to the FL setting. However, until now, there is no research on the impact of global and local hyperparameter optimization in FL. Therefore, we compare a local hyperparameter optimization approach to a global hyperparameter optimization approach, optimizing hyperparameters in the federation process.

The aim of this work is to i) analyze challenges and formal requirements in FL, and in particular in IFL, ii) to evaluate the performance of an Internet of Things (IoT) sensor based classification task in an IFL system, iii) to investigate a communication efficient hyperparameter optimization approach, and iv) to compare different hyperparameter optimization algorithms Therefore, we want to answer the following questions.

Q1: Does FL work for an IoT sensor based anomaly classification task on industrial assets with non-identically distributed data in an IFL system with a cohort strategy?
Q2: Can we assume that the global and local hyperparameter optimization approach deliver the same hyperparameter configuration in an i.i.d. FL setting?
Q3: Can we reduce communication costs in the hyperparameter optimization of a non-i.i.d. classification task in context of FL by optimizing a hyperparameter locally prior to the federation process?
Q4: Does Bayesian optimization outperform grid search, both in a global and local approach of a non-i.i.d. IoT sensor based classification task?

II. ALGORITHMIC CHALLENGES AND FORMAL REQUIREMENTS FOR INDUSTRIAL ASSETS

In FL, new algorithmic challenges arise that differentiate the corresponding optimization problem from a distributed

Ms.S.Vidhya – July 2023

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Department : Computer Science	Department : Biochemistry	Department : Biotechnology
Topic : Quiz Contest on Science and Technology	Theme: Smart Technologies for a Greener Future	Topic : Wealth out of Waste
Open for all Students	Open for all students	Open for all students
Date : 19.02.2024	Last Date to Submit : 22.02.2024	Date : 24.02.2024
Time : 7.00 pm - 8.00 pm	Rules :	Last Date of Registration: 21.02.2024
Rules :	• Content should be original	Rules :
• Prelims Via Google link	• Content can be in Powerpoint slide (or) PDF (or) Videos	• Max 2 Participants per Model
• Final round will be Offline	• Google Link to Upload	• It should be a working Model
		• Offline Presentation

The department organized a Quiz Contest on "Science and Technology" on 22.02.2024 as a part of National Science Day celebration under DBT Star College

VALUE ADDED COURSES

The students are upgraded with the latest technologies through the Value-Added Courses conducted by the department every year. In 2023 - 2024, the department has conducted **3** Courses. They are **ANDROID APP DEVELOPMENT USING ECLIPSE** with strength of 102 students, **3D ANIMATION AND DESIGN** with strength of 110 students and **CLOUD COMPUTING AND INTERNET OF THINGS** with strength of 54 students.

DEPARTMENT MAGAZINES/NEWSLETTER RELEASE

The Department of Computer Science (UG) released the 95th to 99th issues (5 issues) of IT-UNLIMITED Magazine and the11th issue of Department News Letter "Cyber Traces".

BEST PRACTICES OF THE DEPARTMENT

A Computer Information Gallery – a computer encyclopedia out of students' assignment articles have been collected and compiled into a form of book. So far Eleven volumes have been published and released.