



RVSCOLLEGE OF ENGINEERING AND TECHNOLOGY

KumaranKottam Campus, Kannampalayam (Po), Coimbatore – 641
402 (Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

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1.3.2. Name of the Course that include experiential learning through project work / field work / Internship:

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Principal
RVS College of Engineering & Technology
Coimbatore - 641 402



**FARMER MOVEMENT ANALYSIS
AND ALERT SYSTEM
USING MACHINE LEARNING**



PROJECT REPORT

Submitted by

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SUKUMAR C	712819104029

In partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE AND ENGINEERING

RVS COLLEGE OF ENGINEERING AND TECHNOLOGY

COIMBATORE 641402

ANNA UNIVERSITY :: CHENNAI 600 025

MAY 2023

ANNA UNIVERSITY :: CHENNAI 600 025

BONAFIDE CERTIFICATE

Certified that this project report on "FARMER MOVEMENT ANALYSIS AND ALERT SYSTEM USING MACHINE LEARNING" is the bonafide work of ASHWIN C KUMAR (712819104007), ABHINAV V NAMBIAR (712819104702), SANJAY N (712819104727), SUKUMAR C (712819104029), who carried out work under my supervision.



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ABSTRACT

Agriculture is one of the major and the least paid occupation in India, where most of the workers are elderly people and most of them work remotely at rubber estates, teak plantations, tea plantations at high altitudes and unsteady terrain. The objective of agriculture fall detection using machine learning is to improve the safety of agricultural workers and reduce the risk of injury or death due to falls. This can help to reduce severity of injuries and potentially save lives. An automated fall detection system will provide timely assistance and hence, it will reduce medical care costs significantly. The paper presents a machine learning framework consisting of data collection, pre-processing of data, feature extraction and machine learning classifiers. They comprise Random Forest, Naïve Bayes & Decision Tree Classifiers. The Random Forest algorithm combines multiple decision trees to improve accuracy of the classification model, it can handle noisy and complex data. Naïve Bayes handles uncertain and missing data in the input. Decision Tree Classifier is a class capable of performing multi-class classification on a dataset. We analyse original acquisition datasets of values obtained from two accelerometers and on gyroscope performing falls and Activities of Daily Living (ADL) from three-dimensional axis (x, y, z). Datasets are pre-processed using pandas is split to train and test model. The accuracy, precision and recall values are calculated using accuracy_score from Sci-Kit learn. Spatial characteristics were used to train the machine learning classifiers to distinguish between fall and non-fall event. The activity can be monitored by respective farm controller using a web application and alert sound is given if the model detects fall or unusual activity.

Keywords—Fall Detection, Machine Learning, Classifiers, Activities of Daily Living, Gait analysis, Monitoring, Health system.

CHAPTER 9

CONCLUSION AND FUTURE SCOPE

9.1. CONCLUSION

We all are aware of the importance of agricultural worker's safety as well as prompt alert in case of falls or other hazardous movements. Our idea fulfills the requirements and objectives of the system. All the process have been taken place with an ease. The bugs that had occurred earlier have been eliminated and it's fine to work now, hence increased the accuracy to give expected result. The code is easily understandable, moreover it can instantly modified for future betterment or for adding new features in it giving it a user friendly and interactive nature. Thus, this system can analyze farmer/agricultural worker's movement thoroughly, classify between falls and ADLs and alert responsible authorities when fall or any other harmful movement occurs. Provides proactive solution to mitigate risk associated with agricultural workers. Ensures safety of farmers/workers in hilly regions an uncertain terrain. The proposed system achieved 98% accuracy and can detect falls and ADLs efficiently.

9.2. FUTURE SCOPE

The proposed system comprises of a ML model based on decision tree classifier after thoroughly comparing the performance of three algorithms (Random Forest, Naïve Bayes, **Decision Tree** classifier. Moreover, the hardware component of the system isn't implemented. This study has limitations as it did not fully reflect the actual farming environment and a variety of associated fall events. Therefore, further study should be conducted on the following aspects:

- Provide a more valid fall detection system through field tests in actual farming environments, in addition to acquiring and analyzing various fall event data.
- Compare more efficient classification algorithms, use better preprocessing techniques so that the rate of classification and output could be increased
- Similar system could also be implemented using related data in various other fields like for industrial workers, children, patients, post trauma victims etc.

OBJECTIVES:

- To understand the protocol layering and physical level communication.
- To analyze the performance of a network.
- To understand the various components required to build different networks.
- To learn the functions of network layer and the various routing protocols.
- To familiarize the functions and protocols of the Transport layer.

UNIT I INTRODUCTION AND PHYSICAL LAYER 9

Networks – Network Types – Protocol Layering – TCP/IP Protocol suite – OSI Model – Physical Layer: Performance – Transmission media – Switching – Circuit-switched Networks – Packet Switching.

UNIT II DATA-LINK LAYER & MEDIA ACCESS 9

Introduction – Link-Layer Addressing – DLC Services – Data-Link Layer Protocols – HDLC – PPP - Media Access Control - Wired LANs: Ethernet - Wireless LANs – Introduction – IEEE 802.11, Bluetooth – Connecting Devices.

UNIT III NETWORK LAYER 9

Network Layer Services – Packet switching – Performance – IPV4 Addresses – Forwarding of IP Packets - Network Layer Protocols: IP, ICMP v4 – Unicast Routing Algorithms – Protocols – Multicasting Basics – IPV6 Addressing – IPV6 Protocol.

UNIT IV TRANSPORT LAYER 9

Introduction – Transport Layer Protocols – Services – Port Numbers – User Datagram Protocol – Transmission Control Protocol – SCTP.

UNIT V APPLICATION LAYER 9

WWW and HTTP – FTP – Email – Telnet – SSH – DNS – SNMP. TOTAL : 45 PERIODS

OUTCOMES:**On Completion of the course, the students should be able to:**

- Understand the basic layers and its functions in computer networks.
- Evaluate the performance of a network.
- Understand the basics of how data flows from one node to another.
- Analyze and design routing algorithms.
- Design protocols for various functions in the network.
- Understand the working of various application layer protocols.

TEXT BOOK:

1. Behrouz A. Forouzan, Data Communications and Networking, Fifth Edition TMH, 2013.

REFERENCES

1. Larry L. Peterson, Bruce S. Davie, Computer Networks: A Systems Approach, Fifth Edition, Morgan Kaufmann Publishers Inc., 2012.
2. William Stallings, Data and Computer Communications, Tenth Edition, Pearson Education, 2013.
3. Nader F. Mir, Computer and Communication Networks, Second Edition, Prentice Hall, 2014.
4. Ying-Dar Lin, Ren-Hung Hwang and Fred Baker, Computer Networks: An Open Source Approach, McGraw Hill Publisher, 2011.
5. James F. Kurose, Keith W. Ross, Computer Networking, A Top-Down Approach Featuring the Internet, Sixth Edition, Pearson Education, 2013.



PHOTOCHAIN-TACKLING PRIVACY IN SOCIAL NETWORKS



PROJECT REPORT

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ABSTRACT

In recent years, online social **networks** (OSNs) have become increasingly popular due to the rapid development of mobile applications and the explosive growth in online interaction. With the growth and accessibility of technology and internet, the ease of posting and sharing photos on social networking services (SNSs) has increased exponentially. The privacy of online photos is often protected carefully by security mechanisms. However, these mechanisms will lose effectiveness when someone spreads the photos to other platforms the illegal disclosure of user's private data can cause damaging consequences and even threaten the safety of users' life. In recent years, there are some research works to address this privacy issue, yet they do not always focus on providing the normal social **network** services for users, such as data sharing, data retrieval and data access services. Therefore, it is a challenge to ensure the security of sensitive data while providing efficient and privacy-preserving social **network** services for users.

In this paper, we propose Photo Chain, a block chain-based secure photo sharing framework that provides powerful dissemination control for cross-social **network** photo sharing. Combined block-chain, Gaussian Blur for Face Masking, Pre-Hash Algorithm for Photo integrity verification and Access Control, Mechanism can achieve secure data sharing, data retrieving, and data accessing with fairness and without worrying about potential damage to users' interest. In contrast to security mechanisms running separately in centralized servers that do not trust each other, our framework achieves consistent consensus on photo dissemination control through carefully designed smart contract-based protocols. Considering the possible privacy conflicts between owners and subsequent re-posters in cross social network photo sharing, we design a dynamic privacy policy generation algorithm that maximizes the flexibility of re-posters without violating formers' privacy.

CHAPTER 8

8.1 CONCLUSION

In conclusion, the Photo chain framework provides a secure and efficient way to share photos across multiple social media platforms, using the power of block chain technology, pre-hashing algorithm, and Gaussian blur technique provides an innovative and secure solution to the challenges of sharing personal photos across multiple social media platforms. The use of pre-hashing algorithm ensures that photos are not tampered with and are only accessible by authorized users.

The Gaussian blur technique further enhances the privacy of the photos, making them less recognizable to anyone who might try to access them without authorization. The Photo chain framework leverages the decentralized and immutable nature of block chain technology to ensure that users have control over their photos and can share them securely without the risk of unauthorized access, infringement of privacy, or theft. The use of smart contracts enables automated and secure photo sharing while maintaining the privacy of users.

The proposed Photo chain framework also provides a user-friendly interface that allows users to easily manage and control their photos while maintaining full ownership of their data. Additionally, the framework enables the seamless transfer of photos across social media platforms, simplifying the photo-sharing process for users.

Thus, the block chain-based secure photo sharing framework has the potential to transform the way people share personal photos online, providing a more secure and efficient method of sharing personal photos across social networks. The framework can be further enhanced and expanded to address the emerging needs and challenges of photo sharing in the rapidly evolving digital landscape.

OBJECTIVES:

- To understand the basic concepts of mobile computing.
- To learn the basics of mobile telecommunication system .
- To be familiar with the network layer protocols and Ad-Hoc networks.
- To know the basis of transport and application layer protocols.
- To gain knowledge about different mobile platforms and application development.

UNIT I INTRODUCTION 9

Introduction to Mobile Computing – Applications of Mobile Computing- Generations of Mobile Communication Technologies- Multiplexing – Spread spectrum -MAC Protocols – SDMA- TDMA- FDMA- CDMA

UNIT II MOBILE TELECOMMUNICATION SYSTEM 9

Introduction to Cellular Systems - GSM – Services & Architecture – Protocols – Connection Establishment – Frequency Allocation – Routing – Mobility Management – Security – GPRS-UMTS – Architecture – Handover - Security

UNIT III MOBILE NETWORK LAYER 9

Mobile IP – DHCP – AdHoc– Proactive protocol-DSDV, Reactive Routing Protocols – DSR, AODV , Hybrid routing –ZRP, Multicast Routing- ODMRP, Vehicular Ad Hoc networks (VANET) –MANET Vs VANET – Security.

UNIT IV MOBILE TRANSPORT AND APPLICATION LAYER 9

Mobile TCP– WAP – Architecture – WDP – WTLS – WTP –WSP – WAE – WTA Architecture – WML

UNIT V MOBILE PLATFORMS AND APPLICATIONS 9

Mobile Device Operating Systems – Special Constraints & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows Phone – MCommerce – Structure – Pros & Cons – Mobile Payment System – Security Issues

TOTAL 45 PERIODS**OUTCOMES:****At the end of the course, the students should be able to:**

- Explain the basics of mobile telecommunication systems
- Illustrate the generations of telecommunication systems in wireless networks
- Determine the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network
- Explain the functionality of Transport and Application layers
- Develop a mobile application using android/blackberry/ios/Windows SDK

TEXT BOOKS:

1. Jochen Schiller, "Mobile Communications", PHI, Second Edition, 2003.
2. Prasant Kumar Pattnaik, Rajib Mall, "Fundamentals of Mobile Computing", PHI Learning Pvt.Ltd, New Delhi – 2012

REFERENCES

1. Dharma Prakash Agarwal, Qing and An Zeng, "Introduction to Wireless and Mobile systems", Thomson Asia Pvt Ltd, 2005.
2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, "Principles of Mobile Computing", Springer, 2003.
3. William.C.Y.Lee, "Mobile Cellular Telecommunications-Analog and Digital Systems", Second Edition, TataMcGraw Hill Edition ,2006.
4. C.K.Toth, "AdHoc Mobile Wireless Networks", First Edition, Pearson Education, 2002.



IMPLEMENTATION OF MOBILE NEWS APPLICATION USING JAVA



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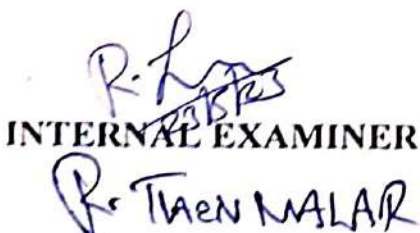
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ABSTRACT

A newsfeed system generates newsfeed for **mobile** users according to her spatial preferences and non-spatial preference. Existing systems simply send the most relevant Geo-tagged messages to their users. The major limitation of such an existing approach is that, news feed may contain messages related to the similar location i.e. point-of-interest. Basically, the main aim of the system is to provide location aware news feed for the **mobile** user and to efficiently organize the newsfeed for user at her current and predicted location. Location-aware news feed scheme takes the relevance and diversity of news feeds into account when arranging news feeds for moving user. It can efficiently provide location and diversity aware News feeds. Location prediction method provides efficiency of Newsfeed. We will get updated about news that happened in the area which is of our interest.

KEY WORDS: Mobile Application; Interactive Services; Portal;
News Access; Virtual Community; Open Technologies; Java ME.

CHAPTER 10

CONCLUSION & FUTURE ENHANCEMENT

10.1 CONCLUSION

Newsfeed generation system aiming at improving the quality of newsfeed. This is done by scheduling multiple location and diversity aware newsfeed for mobile user simultaneously. It can efficiently provide location and diversity aware News feeds. The amount of time and complexity required for manually searching and reading will be reduced and also security of newsfeed is maintained. The news reports can be obtained regularly and also monitored by the Admin. Here correctness and validity of broadcasted news information is verified. The system provides efficiency of News feed. The user will get updated about news that happened in the area which is of their interest. Thus, it helps is to deliver fastest news before media.

10.2 FUTURE ENHANCEMENT

Personalization: The app could use AI and machine learning algorithms to personalize the news feed for each user based on their interests, location, and reading habits. This would help to increase user engagement and retention.

Multilingual support: The app could support multiple languages to cater to a wider audience. This could involve using machine translation to automatically translate articles into different languages or hiring professional translators to do the job.

Audio and video news: The app could incorporate audio and video news content, making it more accessible for users who prefer listening or watching instead of reading. This could include podcasts, video news summaries, or live streaming of news events.

Social sharing: The app could make it easier for users to share news stories on social media platforms like Twitter, Facebook, and LinkedIn. This would help to increase the reach of the app and drive more traffic to the site.

Community features: The app could incorporate community features like comments sections, forums, and user-generated content. This would help to create a sense of community around the app and encourage users to engage with each other.

Personal news assistant: The app could use natural language processing and AI to create a personalized news assistant for each user. This assistant could provide personalized news updates, answer questions, and even engage in conversations with users.

Gamification: The app could incorporate gamification elements to make reading the news more engaging and fun. This could involve rewarding users with points, badges, or other incentives for reading, sharing, and commenting on news stories.

Virtual reality: The app could incorporate virtual reality technology to create immersive news experiences. For example, users could use VR headsets to experience news events in 360-degree video or visit virtual newsrooms to see how news is produced.

OBJECTIVES:

- To know the basics of algorithmic problem solving
- To read and write simple Python programs.
- To develop Python programs with conditionals and loops.
- To define Python functions and call them.
- To use Python data structures -- lists, tuples, dictionaries.
- To do input/output with files in Python.

UNIT I ALGORITHMIC PROBLEM SOLVING 9

Algorithms, building blocks of algorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms (iteration, recursion). Illustrative problems: find minimum in a list, insert a card in a list of sorted cards, guess an integer number in a range, Towers of Hanoi.

UNIT II DATA, EXPRESSIONS, STATEMENTS 9

Python interpreter and interactive mode; values and types: int, float, boolean, string, and list; variables, expressions, statements, tuple assignment, precedence of operators, comments; modules and functions, function definition and use, flow of execution, parameters and arguments; Illustrative programs: exchange the values of two variables, circulate the values of n variables, distance between two points.

UNIT III CONTROL FLOW, FUNCTIONS 9

Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: state, while, for, break, continue, pass; Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Lists as arrays. Illustrative programs: square root, gcd, exponentiation, sum an array of numbers, linear search, binary search.

UNIT IV LISTS, TUPLES, DICTIONARIES 9

Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters; Tuples: tuple assignment, tuple as return value; Dictionaries: operations and methods; advanced list processing - list comprehension; Illustrative programs: selection sort, insertion sort, mergesort, histogram.

UNIT V FILES, MODULES, PACKAGES 9

Files and exception: text files, reading and writing files, format operator; command line arguments, errors and exceptions, handling exceptions, modules, packages; Illustrative programs: word count, copy file.

TOTAL: 45 PERIODS**OUTCOMES:****Upon completion of the course, students will be able to**

- Develop algorithmic solutions to simple computational problems
- Read, write, execute by hand simple Python programs.
- Structure simple Python programs for solving problems.
- Decompose a Python program into functions.
- Represent compound data using Python lists, tuples, dictionaries.
- Read and write data from/to files in Python Programs.

TEXT BOOKS:

1. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers, 2016 (<http://greenteapress.com/wp/think-python/>)
2. Guido van Rossum and Fred L. Drake Jr, "An Introduction to Python – Revised and

updated for Python 3.2, Network Theory Ltd., 2011.

REFERENCES:

1. John V Guttag, "Introduction to Computation and Programming Using Python", Revised and expanded Edition, MIT Press , 2013
2. Robert Sedgewick, Kevin Wayne, Robert Dondero, "Introduction to Programming in Python: An Inter-disciplinary Approach, Pearson India Education Services Pvt. Ltd., 2016.
3. Timothy A. Budd, "Exploring Python", Mc-Graw Hill Education (India) Private Ltd.,, 2015.
4. Kenneth A. Lambert, "Fundamentals of Python: First Programs", CENGAGE Learning, 2012.
5. Charles Dierbach, "Introduction to Computer Science using Python: A Computational Problem-Solving Focus, Wiley India Edition, 2013.
6. Paul Gries, Jennifer Campbell and Jason Montojo, "Practical Programming: An Introduction to Computer Science using Python 3", Second edition, Pragmatic Programmers, LLC, 2013.



**NET BANKING FRAUD DETECTION
USING MACHINE LEARNING**



PROJECT REPORT

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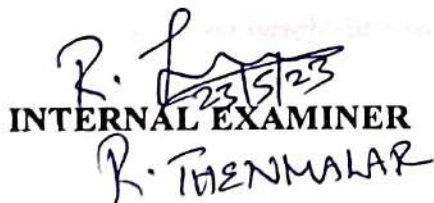
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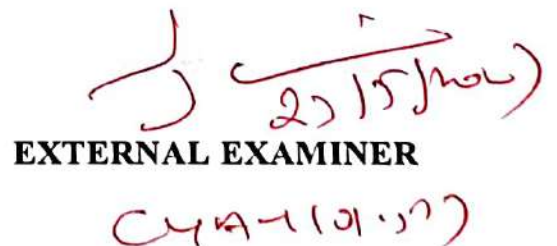
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Submitted for the Project Viva-Voice examination held on 23/05/2023



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C. A. (10.11)

ABSTRACT

Net banking fraud is one of the most common types of fraud and it causes significant financial losses to individuals and companies. Machine learning algorithms have been widely used to detect Net banking fraud due to their ability to learn from historical data and identify fraudulent patterns. In this study, we used the random forest algorithm to detect Net banking fraud. We used various pre-processing techniques such as data cleaning, feature selection, and normalization to prepare the dataset for the algorithm. We then trained the random forest algorithm on the pre-processed dataset and evaluated its performance using various metrics such as accuracy, precision, recall, and F1-score. The results showed that the random forest algorithm performed well in detecting net banking fraud, achieving a good accuracy. Our findings suggest that the random forest algorithm can be an effective tool for net banking fraud detection and can help financial institutions to prevent fraudulent transactions and minimize financial losses.

KEY WORDS: Random Forest algorithm (machine learning), To check our transaction history is fraudulent or not, To improve the accuracy of the prediction

CHAPTER 8

CONCLUSION & FUTURE SCOPE

8.1. CONCLUSION

Net banking fraud is a serious problem that affects individuals and companies worldwide. Machine learning algorithms have shown great potential in detecting fraudulent transactions and minimizing financial losses. In this study, we used the random forest algorithm to detect net banking fraud, and our results showed that it performed well in identifying fraudulent patterns in the dataset. The accuracy achieved by the algorithm was 98.5%, indicating that it can be a useful tool for financial institutions in detecting net banking fraud. However, it is important to note that no algorithm is perfect, and there is always room for improvement.

8.2. FUTURE SCOPE

Future research can focus on improving the performance of the random forest algorithm by using advanced preprocessing techniques, incorporating more features, and exploring other machine learning algorithms. Overall, the use of machine learning algorithms for net banking fraud detection can help financial institutions to prevent fraudulent transactions and protect their customers from financial losses.

OBJECTIVES:

- To learn the basic structure and operations of a computer.
- To learn the arithmetic and logic unit and implementation of fixed-point and floating point arithmetic unit.
- To learn the basics of pipelined execution.
- To understand parallelism and multi-core processors.
- To understand the memory hierarchies, cache memories and virtual memories.
- To learn the different ways of communication with I/O devices.

UNIT I BASIC STRUCTURE OF A COMPUTER SYSTEM 9

Functional Units – Basic Operational Concepts – Performance – Instructions: Language of the Computer – Operations, Operands – Instruction representation – Logical operations – decision making – MIPS Addressing.

UNIT II ARITHMETIC FOR COMPUTERS 9

Addition and Subtraction – Multiplication – Division – Floating Point Representation – Floating Point Operations – Subword Parallelism

UNIT III PROCESSOR AND CONTROL UNIT 9

A Basic MIPS implementation – Building a Datapath – Control Implementation Scheme – Pipelining – Pipelined datapath and control – Handling Data Hazards & Control Hazards – Exceptions.

UNIT IV PARALLELISIM 9

Parallel processing challenges – Flynn’s classification – SISD, MIMD, SIMD, SPMD, and Vector Architectures - Hardware multithreading – Multi-core processors and other Shared Memory Multiprocessors - Introduction to Graphics Processing Units, Clusters, Warehouse Scale Computers and other Message-Passing Multiprocessors.

UNIT V MEMORY & I/O SYSTEMS 9

Memory Hierarchy - memory technologies – cache memory – measuring and improving cache performance – virtual memory, TLB’s – Accessing I/O Devices – Interrupts – Direct Memory Access – Bus structure – Bus operation – Arbitration – Interface circuits - USB.

TOTAL : 45 PERIODS

OUTCOMES:

On Completion of the course, the students should be able to:

- Understand the basics structure of computers, operations and instructions.
- Design arithmetic and logic unit.
- Understand pipelined execution and design control unit.
- Understand parallel processing architectures.
- Understand the various memory systems and I/O communication.

TEXT BOOKS:

1. David A. Patterson and John L. Hennessy, Computer Organization and Design: The Hardware/Software Interface, Fifth Edition, Morgan Kaufmann / Elsevier, 2014.
2. Carl Hamacher, Zvonko Vranesic, Safwat Zaky and Naraig Manjikian, Computer Organization and Embedded Systems, Sixth Edition, Tata McGraw Hill, 2012.

REFERENCES:

1. William Stallings, Computer Organization and Architecture – Designing for Performance, Eighth Edition, Pearson Education, 2010.



**PREVENTING CYBERBULLYING IN
SOCIAL NETWORKING SITES**



PROJECT REPORT

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712819104020

in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

RVS COLLEGE OF ENGINEERING AND TECHNOLOGY

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MAY 2023

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INTERNAL EXAMINER

R. THENNALAR



EXTERNAL EXAMINER

ABSTRACT

Cyberbullying is bullying that takes place over digital devices like cell phones, computers and tablets. Cyberbullying can occur through SMS, Text and apps or online in social media, forums or gaming where people can view, participate in or share content. Cyberbullying includes sending posting or sharing negative, harmful, false or mean content about someone else. It can include sharing personal or private information about someone else causing embarrassment or humiliation. A content an individual share online – both their personal content as well as any negative, mean or hurtful content – creates a kind of permanent public record of their views, activities and behaviour. To avoid or detecting cyberbullying attacks, many existing approaches in the literature incorporate Machine Learning and Natural Language Processing text classification models without considering the sentence semantics. The main goal of this project is to overcome that issue.

This proposed system is a model LSTM - CNN **architecture** for detecting cyberbullying attacks and it used word2vec to train the custom of word embeddings. This model is used to classify tweets or comments as bullying or non-bullying based on the toxicity score. LSTM networks are well-suited to classifying, processing and making predictions based on time series data, since there can be lags of unknown duration between important events in a time series. A convolutional neural network (CNN) is a type of artificial neural network and it has a convolutional layer to extract information by a larger piece of text and by using this model LSTM- CNN achieve a higher accuracy in analysis, classification and detecting the cyberbullying attacks on posts and comments.

CHAPTER 10

CONCLUSION

10.1 CONCLUSION

Cyberbullying is the harassment that takes place in digital devices such as mobile phones, computers and tablets. The means used to harass victims are very diverse: text messages, applications, social media, forums or interactive games. One of the things that complicates these types of situations that occur through the Internet, is the anonymity this environment allows. Since this facilitates cyberbullying can cover almost all areas of the victim's life, that is: educational environment, work, social or loving life. When the identity of the harasser is not known, even if the facts are reported, in many cases it is not enough to open an investigation, identify it and pay for the crime committed. This project proposed a deep learning model Bidirectional Long Short Term Memory (BiLSTM). Thus, this project as designed a method of automatically detecting the Cyberbullying attack cases. Identifies the messages or comments or posts which the BiLSTM model predicts as offensive or negative then it blocks that person id, then the admin can create automated reports and send to the concern department. The results showed that all models performed well on tweet dataset but our proposed BiLSTM classifier outperforms by using both TF and TF-IDF among all. Proposed model achieves the highest results using TFIDF with 96% Accuracy, 92% Recall and 95% F1-score.

10.2 FUTURE SCOPE

For the present, the bot works for Twitter, so it can be extended to various other social media platforms like Instagram, Reedit, etc. Currently, only images are classified for NSFW content, classifying text, videos could be an addition.

OBJECTIVES:

- To understand the concept of cloud computing.
- To appreciate the evolution of cloud from the existing technologies.
- To have knowledge on the various issues in cloud computing.
- To be familiar with the lead players in cloud.
- To appreciate the emergence of cloud as the next generation computing paradigm.

UNIT I INTRODUCTION 9

Introduction to **Cloud Computing** – Definition of Cloud – Evolution of **Cloud Computing** – Underlying Principles of Parallel and Distributed Computing – **Cloud Characteristics** – Elasticity in Cloud – On-demand Provisioning.

UNIT II CLOUD ENABLING TECHNOLOGIES 10

Service Oriented Architecture – REST and Systems of Systems – Web Services – Publish-Subscribe Model – Basics of Virtualization – Types of Virtualization – Implementation Levels of Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices – Virtualization Support and Disaster Recovery.

UNIT III CLOUD ARCHITECTURE, SERVICES AND STORAGE 8

Layered Cloud Architecture Design – NIST Cloud Computing Reference Architecture – Public, Private and Hybrid Clouds - IaaS – PaaS – SaaS – Architectural Design Challenges – **Cloud Storage** – **Storage-as-a-Service** – **Advantages of Cloud Storage** – **Cloud Storage Providers** – S3.

UNIT IV RESOURCE MANAGEMENT AND SECURITY IN CLOUD 10

Inter Cloud Resource Management – Resource Provisioning and Resource Provisioning Methods – Global Exchange of Cloud Resources – Security Overview – Cloud Security Challenges – Software-as-a-Service Security – Security Governance – Virtual Machine Security – IAM – Security Standards.

UNIT V CLOUD TECHNOLOGIES AND ADVANCEMENTS 8

Hadoop – MapReduce – Virtual Box -- Google App Engine – Programming Environment for Google App Engine – Open Stack – Federation in the Cloud – Four Levels of Federation – Federated Services and Applications – Future of Federation.

TOTAL: 45 PERIODS**OUTCOMES:****On Completion of the course, the student should be able to:**

- Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
- Learn the key enabling technologies that help in the development of cloud.
- Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
- Explain the core issues of cloud computing such as resource management and security.
- Be able to install and use current cloud technologies.
- Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.

TEXTBOOKS:

1. Kai Hwang, Geoffrey C. Fox, Jack G. Dongarra, "Distributed and Cloud Computing, From Parallel Processing to the Internet of Things", Morgan Kaufmann Publishers, 2012.
2. Rittinghouse, John W., and James F. Ransome, "Cloud Computing: Implementation, Management and Security", CRC Press, 2017.
1. in Practice)", O'Reilly, 2009.



**SECURED FOR CLOUD – BASED DATA
SHARING MULTI – AUTHORITY ACCESS
CONTROL SYSTEM**



PROJECT REPORT

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IN

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MAY 2023

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INTERNAL EXAMINER
R. THENMALAR



EXTERNAL EXAMINER
(23/05/2023)

ABSTRACT

With the development of cloud computing, the great amount of storage data requires safe and efficient data sharing. In multiparty storage data sharing, first, the confidentiality of shared data is ensured to achieve data privacy preservation. Second, the security of stored data is ensured. That is, when stored shared data are subject to frequent access operations, the server's address sequence or access pattern is hidden. Therefore, determining how to ensure the untrace ability of stored data or efficient hide the data access pattern in sharing stored data is a challenge. By leveraging proxy re-encryption and Oblivious Random Access Memory (ORAM), a privacy-preserving and untraceable scheme is proposed to support multiple users in sharing data in cloud computing. On the one hand, group members and proxies use the key exchange phase to obtain keys and resist multiparty collusion if necessary.

KEY WORDS: Oblivious Random Access Memory (ORAM), One-way Circular Linked Table, Leverage Proxy re-encryption, Ciphertext, User Secret Key

CHAPTER- 8

CONCLUSION

8.1 CONCLUSION

In this project, we present a secure and untraceable protocol for group data sharing in a **cloud storage** scheme. Based on key exchange, the proposed approach can efficiently generate the users conference key, which can be used to protect the security of shared data and prevent malicious user collusion with other users. In addition, security of shared group data in the cloud and access control is achieved with respect to the encryption technique. The sufficient security proof indicates the security of our protocol. The experimental comparison results could be considered as validation of the performance of our protocol, making it substantially more convincing.

8.2 SCOPE FOR FUTURE ENHANCEMENT

There is scope for future development of this project. The world of computer fields is not static; it is always subject to be dynamic. The technology which is famous today becomes outdated the very next day. To keep abstract of technical improvements, the system may be further refined. So, it is not concluded. Yet it will improve with further enhancements. Enhancements can be done in an efficient manner. We can even update the same with further modification establishment and can be integrated with minimal modification. Thus the project is flexible and can be enhanced at anytime with more advanced features.

OBJECTIVES:

- To understand and apply the algorithm analysis techniques.
- To critically analyze the efficiency of alternative algorithmic solutions for the same problem
- To understand different algorithm design techniques.
- To understand the limitations of Algorithmic power.

UNIT I INTRODUCTION**9**

Notion of an Algorithm – Fundamentals of Algorithmic Problem Solving – Important Problem Types – Fundamentals of the Analysis of Algorithmic Efficiency – Asymptotic Notations and their properties. Analysis Framework – Empirical analysis - Mathematical analysis for Recursive and Non-recursive algorithms - Visualization

UNIT II BRUTE FORCE AND DIVIDE-AND-CONQUER**9**

Brute Force – Computing a^n – String Matching - Closest-Pair and Convex-Hull Problems - Exhaustive Search - Travelling Salesman Problem - Knapsack Problem - Assignment problem. Divide and Conquer Methodology – Binary Search – Merge sort – Quick sort – Heap Sort - Multiplication of Large Integers – Closest-Pair and Convex - Hull Problems.

UNIT III DYNAMIC PROGRAMMING AND GREEDY TECHNIQUE**9**

Dynamic programming – Principle of optimality - Coin changing problem, Computing a Binomial Coefficient – Floyd's algorithm – Multi stage graph - Optimal Binary Search Trees – Knapsack Problem and Memory functions.

Greedy Technique – Container loading problem - Prim's algorithm and Kruskal's Algorithm – 0/1 Knapsack problem, Optimal Merge pattern - Huffman Trees.

UNIT IV ITERATIVE IMPROVEMENT**9**

The Simplex Method - The Maximum-Flow Problem – Maximum Matching in Bipartite Graphs, Stable marriage Problem.

UNIT V COPING WITH THE LIMITATIONS OF ALGORITHM POWER**9**

Lower - Bound Arguments - P, NP NP- Complete and NP Hard Problems. Backtracking – n-Queen problem - Hamiltonian Circuit Problem – Subset Sum Problem. Branch and Bound – LIFO Search and FIFO search - Assignment problem – Knapsack Problem – Travelling Salesman Problem - Approximation Algorithms for NP-Hard Problems – Travelling Salesman problem – Knapsack problem.

**TOTAL: 45 PERIODS
OUTCOMES:****At the end of the course, the students should be able to:**

- Design algorithms for various computing problems.
- Analyze the time and space complexity of algorithms.
- Critically analyze the different algorithm design techniques for a given problem.
- Modify existing algorithms to improve efficiency.

TEXT BOOKS:

1. Anany Levitin, "Introduction to the Design and Analysis of Algorithms", Third Edition, Pearson Education, 2012.
2. Ellis Horowitz, Sartaj Sahni and Sanguthevar Rajasekaran, Computer Algorithms/ C++, Second Edition, Universities Press, 2007.

REFERENCES:

1. Thomas H.Cormen, Charles E.Leiserson, Ronald L. Rivest and Clifford Stein, "Introduction to Algorithms", Third Edition, PHI Learning Private Limited, 2012.
2. Alfred V. Aho, John E. Hopcroft and Jeffrey D. Ullman, "Data Structures and Algorithms", Pearson Education, Reprint 2006.



TWITTER SENTIMENT ANALYSIS USING MACHINE LEARNING TECHNIQUES



PROJECT REPORT

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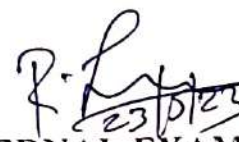

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INTERNAL EXAMINER
R. VENMALAR


EXTERNAL EXAMINER
23/5/2023
24A-1012

ABSTRACT

Twitter Data Classification using Sentimental **Analysis** – Sentiment **Analysis** probes public opinion on user-generated content on the Web like blogs, social media, or e-commerce websites. The results of Sentiment **Analysis** are getting much attention with marketers that they are able to evaluate the success of an advertising campaign or the attitude of people on a new product launch. Business owners and advertising companies are using Sentiment **Analysis** to start new business strategies and to identify opportunities for new product development. The collected tweets were classified into positive, negative, and neutral sentiments. The machine learning classifier algorithms cross-validation were applied on the dataset and the results were tabulated for comparing and estimating which classifier algorithm yields the best accuracy. Other performance metric values like F Score, Precision, Recall were also calculated for comparison of various classifier performances on Sentiment **Analysis**.

Keywords—Machine Learning, Sentiment Analysis, Twitter, Data Mining, Product Evaluation,

CHAPTER 8

CONCLUSION

The implementation of machine learning based techniques have been applied in this project and the results are compared. It has been observed that for a totally new data/text machine learning-based models trained over related data are much more accurate than the classification based on standard dictionaries. This is because the text that's being monitored i.e the tweets are particularly informal and does not use normal grammar statute or spelling and therefore the data here is extremely amorphous. The comparison results can be clearly observed.

CS8792	CRYPTOGRAPHY AND NETWORK SECURITY	L	T	P	C
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OBJECTIVES:

- To understand Cryptography Theories, Algorithms and Systems.
- To understand necessary Approaches and Techniques to build protection mechanisms in order to secure computer networks.

UNIT I INTRODUCTION 9

Security trends - Legal, Ethical and Professional Aspects of Security, Need for Security at Multiple levels, Security Policies - Model of network security – Security attacks, services and mechanisms – OSI security architecture – Classical encryption techniques: substitution techniques, transposition techniques, steganography- Foundations of modern cryptography: perfect security – information theory – product cryptosystem – cryptanalysis.

UNIT II SYMMETRIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF SYMMETRIC KEY CRYPTOGRAPHY: Algebraic structures - Modular arithmetic-Euclid's algorithm- Congruence and matrices - Groups, Rings, Fields- Finite fields- SYMMETRIC KEY CIPHERS: DES – Block cipher Principles of DES – Strength of DES – Differential and linear cryptanalysis - Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – Advanced Encryption Standard - RC4 – Key distribution.

UNIT III PUBLIC KEY CRYPTOGRAPHY 9

MATHEMATICS OF ASYMMETRIC KEY CRYPTOGRAPHY: Primes – Primality Testing – Factorization – Euler's totient function, Fermat's and Euler's Theorem - Chinese Remainder Theorem – Exponentiation and logarithm - ASYMMETRIC KEY CIPHERS: RSA cryptosystem – Key distribution – Key management – Diffie Hellman key exchange - ElGamal cryptosystem – Elliptic curve arithmetic-Elliptic curve cryptography.

UNIT IV MESSAGE AUTHENTICATION AND INTEGRITY 9

Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – SHA – Digital signature and authentication protocols – DSS- Entity Authentication: Biometrics, Passwords, Challenge Response protocols- Authentication applications - Kerberos, X.509

UNIT V SECURITY PRACTICE AND SYSTEM SECURITY 9

Electronic Mail security – PGP, S/MIME – IP security – Web Security - SYSTEM SECURITY: Intruders – Malicious software – viruses – Firewalls.

TOTAL 45 PERIODS

OUTCOMES:

At the end of the course, the student should be able to:

- Understand the fundamentals of networks security, security architecture, threats and vulnerabilities
- Apply the different cryptographic operations of symmetric cryptographic algorithms
- Apply the different cryptographic operations of public key cryptography
- Apply the various Authentication schemes to simulate different applications.
- Understand various Security practices and System security standards

TEXT BOOK:

1. William Stallings, Cryptography and Network Security: Principles and Practice, PHI 3rd Edition, 2006.

REFERENCES:

1. C K Shyamala, N Harini and Dr. T R Padmanabhan: Cryptography and Network



SECURE E-MEDICAL RECORD BASED ON BLOCKCHAIN TECHNOLOGY



PROJECT REPORT

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INTERNAL EXAMINER
R. THENMALAR



EXTERNAL EXAMINER

ABSTRACT

Block chains are **cryptographically secure**, and the data present there in can be authenticated using **digital signature** that are unique to each person, this technology could be the answer to most of these concerns. We create a **Blockchain** for each patient for storing their Electronic Health Record details like health insurance, doctor, lab results, medicine details etc. If patient visit different hospital, they identified patient's previous details, healthcare insurance and pharmacy by using patient id. Secures the transfer of funds by using a **digital signature algorithm** to prove ownership. And finally allows users to make transactions on your Blockchain.

In recent years, blockchain technology has gained significant attention due to its potential to provides secure and transparent data sharing. In this project, we propose the implementation of a decentralized blockchain network for secure data sharing. The network will be built using the Ethereum blockchain platform and will use smart contracts for secure and transparent data exchange between different parties. We developed a user-friendly interface for accessing and interacting with the network. This project will involve the development and testing of smart contracts, deployment of the blockchain network, and evaluation of its performance in terms of security, scalability, and efficiency. Our project aims to provide a practical solution for secure and transparent data sharing with **SHA-256 Cryptographic Hash Algorithm** that can be applied to various industries, including healthcare, finance, and logistics.

KEYWORDS : **Blockchain, Cryptographic Hash Algorithm, Healthcare, Health Record, Digital Signature, Smart Contracts.**

CHAPTER 8

CONCLUSION AND FUTURE SCOPE

8.1 CONCLUSION

In conclusion, electronic health records (EHRs) based on blockchain technology offer a promising solution to the challenges faced by traditional EHRs. By leveraging the decentralized and immutable nature of blockchain, EHRs can provide secure, transparent, and tamper-proof storage of health records that can be accessed by authorized parties without compromising patient privacy. Moreover, blockchain-based EHRs can enable patients to have greater control over their own health data, and can potentially reduce healthcare costs by streamlining administrative processes and eliminating intermediaries. However, the implementation of blockchain-based EHRs requires careful consideration of various factors, including data privacy, interoperability, scalability, and regulatory compliance. In addition, the development of blockchain-based EHRs requires a multidisciplinary approach, involving collaboration between healthcare providers, blockchain developers, and other stakeholders. Despite these challenges, the potential benefits of blockchain-based EHRs make them an exciting area of development and research, with many ongoing projects and initiatives exploring their feasibility and effectiveness. Overall, blockchain technology has the potential to revolutionize the healthcare industry by providing secure, efficient, and patient-centric EHRs that can improve patient outcomes and transform healthcare delivery.

8.2 FUTURE SCOPE

Blockchain has a place in healthcare claims management. Recognizing the difficult challenges healthcare providers and payers face with claims management in the era of value-based care, advanced blockchain technologies are helping

OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION 9

Introduction – Definition – Future of Artificial Intelligence – Characteristics of Intelligent Agents – Typical Intelligent Agents – Problem Solving Approach to Typical AI problems.

UNIT II PROBLEMSOLVINGMETHODS 9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems – Constraint Propagation - Backtracking Search - Game Playing - Optimal Decisions in Games – Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGEREPRESENTATION 9

First Order Predicate Logic – Prolog Programming – Unification – Forward Chaining-Backward Chaining – Resolution – Knowledge Representation - Ontological Engineering-Categories and Objects – Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWAREAGENTS 9

Architecture for Intelligent Agents – Agent communication – Negotiation and Bargaining – Argumentation among Agents – Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS 9

AI applications – Language Models – Information Retrieval- Information Extraction – Natural Language Processing - Machine Translation – Speech Recognition – Robot – Hardware – Perception – Planning – Moving

TOTAL:45PERIODS**OUTCOMES:****Upon completion of the course, the students will be able to:**

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXTBOOKS:

- 1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.
- 2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.

REFERENCES:

1. M. Tim Jones, "Artificial Intelligence: A Systems Approach (Computer Science)", Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, "The Quest for Artificial Intelligence", Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish, "Programming in Prolog: Using the ISO Standard", Fifth Edition, Springer, 2003.
4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.



VOICE BASED VIRTUAL ASSISTANT FOR MONITORING HEALTH



PROJECT REPORT

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GOKUL R

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R. VENMALAR



EXTERNAL EXAMINER

CHA-101-17

ABSTRACT

The Chatbot is a software programs that is used to interact with clients using natural language Processing via text or text to speech format. Today in the present era, the major challenges that India as a country is facing is to cater good quality and affordable healthcare services to its growing population and at the same time, they are not cost efficient. Nowadays, it is becoming very difficult to provide healthcare facilities as we have seen in COVID-19 critical situations that the condition in India was getting worse because of lack of transportation, availability of doctors and hospitality. Sometimes it causes the people to postpone their treatment as well as there is an increment in death count. The aim of our Project is to design a Conversational AI Powered Chatbot for Medical Diagnostics using Deep Learning which mainly focuses on rural parts as well as poor and needy people of our country. Our System has the capability to understand the symptoms of the patient and communicates with Patient (End-user) through web-UI. Our system tries to solve their problem with the help of the symptoms provided by Patient itself and help them to give the correct antibiotics medicines and precautions. NLTK (Natural Language Toolkit) is a module program in python which can able to perform symbolic and statistical Natural Language Processing for English written in Programming. It is used to analyze the input in the form of speech and generate responses that are similar to humans.

Keywords: AI chatbot, symptoms recognizer, health care chatbot

CHAPTER 8

CONCLUSION AND FUTURE ENHANCEMENT

8.1 Conclusion

In this research, we developed an **Artificially Intelligent** Chat-bot using applications of Deep Learning to fight COVID-19 including various viral diseases faced by human being in day Today life. Keeping in mind, the situation of the rural population and imbalance between the demand and healthcare services currently provided, so by developing this Health chatbot will bridge a gap by creating a conversational application with natural language processing. We also have implemented speech to text conversation type for better use of Chat-bot.

8.2 Future Enhancement

We covered some solutions to the user's query which will be beneficial for proper understanding of the patients. For future7 improvement, we plan to extent our application to add more parameters like heart rate, blood pressure, body temperature. This will increase the accuracy of the prediction of the disease using symptoms.

OBJECTIVES:

- To understand the basic concepts and functions of operating systems.
- To understand Processes and Threads
- To analyze Scheduling algorithms.
- To understand the concept of Deadlocks.
- To analyze various memory management schemes.
- To understand I/O management and File systems.
- To be familiar with the basics of Linux system and Mobile OS like iOS and Android.

UNIT I OPERATING SYSTEM OVERVIEW 7

Computer System Overview-Basic Elements, Instruction Execution, Interrupts, Memory Hierarchy, Cache Memory, Direct Memory Access, Multiprocessor and Multicore Organization. Operating system overview-objectives and functions, Evolution of Operating System.- Computer System Organization Operating System Structure and Operations- System Calls, System Programs, OS Generation and System Boot.

UNIT II PROCESS MANAGEMENT 11

Processes - Process Concept, Process Scheduling, Operations on Processes, Inter-process Communication; CPU Scheduling - Scheduling criteria, Scheduling algorithms, Multiple-processor scheduling, Real time scheduling; Threads- Overview, Multithreading models, Threading issues; Process Synchronization - The critical-section problem, Synchronization hardware, Mutex locks, Semaphores, Classic problems of synchronization, Critical regions, Monitors; Deadlock - System model, Deadlock characterization, Methods for handling deadlocks, Deadlock prevention, Deadlock avoidance, Deadlock detection, Recovery from deadlock.

UNIT III STORAGE MANAGEMENT 9

Main Memory – Background, Swapping, Contiguous Memory Allocation, Paging, Segmentation, Segmentation with paging, 32 and 64 bit architecture Examples; Virtual Memory – Background, Demand Paging, Page Replacement, Allocation, Thrashing; Allocating Kernel Memory, OS Examples.

UNIT IV FILE SYSTEMS AND I/O SYSTEMS 9

Mass Storage system – Overview of Mass Storage Structure, Disk Structure, Disk Scheduling and Management, swap space management; File-System Interface - File concept, Access methods, Directory Structure, Directory organization, File system mounting, File Sharing and Protection; File System Implementation- File System Structure, Directory implementation, Allocation Methods, Free Space Management, Efficiency and Performance, Recovery; I/O Systems – I/O Hardware, Application I/O interface, Kernel I/O subsystem, Streams, Performance.

UNIT V CASE STUDY 9

Linux System - Design Principles, Kernel Modules, Process Management, Scheduling, Memory Management, Input-Output Management, File System, Inter-process Communication; Mobile OS - iOS and Android - Architecture and SDK Framework, Media Layer, Services Layer, Core OS Layer, File System.

TOTAL : 45 PERIODS**OUTCOMES:****At the end of the course, the students should be able to:**

- Analyze various scheduling algorithms.
- Understand deadlock, prevention and avoidance algorithms.
- Compare and contrast various memory management schemes.
- Understand the functionality of file systems.
- Perform administrative tasks on Linux Servers.
- Compare iOS and Android Operating Systems.

TEXT BOOK :

1. Abraham Silberschatz, Peter Baer Galvin and Greg Gagne, "Operating System Concepts", 9th Edition, John Wiley and Sons Inc., 2012.

REFERENCES :

1. Ramaz Elmasri, A. Gil Carrick, David Levine, "Operating Systems – A Spiral Approach", Tata McGraw Hill Edition, 2010.
2. Achyut S.Godbole, Atul Kahate, "Operating Systems", McGraw Hill Education, 2016.
3. Andrew S. Tanenbaum, "Modern Operating Systems", Second Edition, Pearson Education, 2004.
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5. Harvey M. Deitel, "Operating Systems", Third Edition, Pearson Education, 2004.
6. Daniel P Bovet and Marco Cesati, "Understanding the Linux kernel", 3rd edition, O'Reilly, 2005.
7. Neil Smyth, "iPhone iOS 4 Development Essentials – Xcode", Fourth Edition, Payload media, 2011.



**ENABLING EFFICIENT SECURE AND
PRIVACY PRESERVING MOBILE**



CLOUD STORAGE

PROJECT REPORT

Submitted by

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HEMALATHA P

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in partial fulfilment for the award of the degree

of

BACHELOR OF ENGINEERING

in

COMPUTER SCIENCE AND ENGINEERING

RVS COLLEGE OF ENGINEERING AND TECHNOLOGY

COIMBATORE 641402

ANNA UNIVERSITY :: CHENNAI 600 025

MAY-2023

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BONAFIDE CERTIFICATE

Certified that this project report on “ENABLING EFFICIENT SECURE AND PRIVACY PRESERVING MOBILE CLOUD STORAGE” is the bonafide work of MADHAVAN K (712819104017), JEROLD CHRISTOPHER A (712819104715), HEMALATHA P (712819104725), carried out the project work under my supervision.


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Submitted for the Project Viva-Voce examination held on 23/05/2023


INTERNAL EXAMINER
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EXTERNAL EXAMINER

ABSTRACT

Clients can get a handy cloud **storage solution** thanks to **mobile cloud** storage (MCS). In this article, we provide a productive, safe, and privacy-preserving mobile cloud **storage system** that concurrently safeguards data confidentiality and privacy, particularly the access pattern. In particular, we provide an OSU protocol as the fundamental building block of the suggested mobile cloud storage system. The client can obviously retrieve an encrypted data item from the cloud and update it with a new value by generating a small encrypted vector using OSU, which is based on onion additively secure encryption with constant encryption layers. This greatly reduces the client's computation and communication overheads. Our work is particularly advantageous for MCS scenarios because to its fine-grained data structure, light client-side processing, and constant connection overhead. Also, by using the file chunks method, our system may be tested for its resistance to malicious cloud. With our improvement, we split a file into pieces and replicate the broken data among cloud nodes. Each server keeps a portion of a data file, ensuring that even in the event of a successful attack, the attacker would not learn any useful information.

CHAPTER-6

CONCLUSION

In this paper, we propose an efficient, secure and privacy- preserving **mobile cloud storage** (MCS). The proposed scheme can protect data and access pattern simultaneously. Compared with existing schemes. We also take temporal locality into consideration to further improve the efficiency of the scheme. The security and privacy proofs and analyses show that our scheme achieves data confidentiality and sufficient privacy preservation level. Finally, we compare our scheme with other two oblivious storage schemes and fully estimate our construction in a simulation environment. The results indicate that our scheme is significantly efficient and has good performances.

OBJECTIVES:

- To understand the foundations of distributed systems.
- To learn issues related to clock Synchronization and the need for global state in distributed systems.
- To learn distributed mutual exclusion and deadlock detection algorithms.
- To understand the significance of agreement, fault tolerance and recovery protocols in Distributed Systems.
- To learn the characteristics of peer-to-peer and distributed shared memory systems.

UNIT I INTRODUCTION**9**

Introduction: Definition –Relation to computer system components –Motivation –Relation to parallel systems – Message-passing systems versus shared memory systems –Primitives for distributed communication –Synchronous versus asynchronous executions –Design issues and challenges. **A model of distributed computations:** A distributed program –A model of distributed executions –Models of communication networks –Global state– Cuts–Past and future cones of an event –Models of process communications. **Logical Time:** A framework for a system of logical clocks –Scalar time –Vector time– Physical clock synchronization: NTP.

UNIT II MESSAGE ORDERING & SNAPSHOTS**9**

Message ordering and group communication: Message ordering paradigms –Asynchronous execution with synchronous communication –Synchronous program order on an asynchronous system –Group communication – Causal order (CO) - Total order. **Global state and snapshot recording algorithms:** Introduction –System model and definitions –Snapshot algorithms for FIFO channels

UNIT III DISTRIBUTED MUTEX & DEADLOCK**9**

Distributed mutual exclusion algorithms: Introduction – Preliminaries – Lamport's algorithm – Ricart-Agrawala algorithm – Maekawa's algorithm – Suzuki–Kasami's broadcast algorithm. **Deadlock detection in distributed systems:** Introduction – System model – Preliminaries – Models of deadlocks – Knapp's classification –Algorithms for the single resource model, the AND model and the OR model.

UNIT IV RECOVERY & CONSENSUS**9**

Checkpointing and rollback recovery: Introduction – Background and definitions – Issues in failure recovery – Checkpoint-based recovery – Log-based rollback recovery – Coordinated checkpointing algorithm – Algorithm for asynchronous checkpointing and recovery. **Consensus and agreement algorithms:** Problem definition – Overview of results – Agreement in a failure – free system– Agreement in synchronous systems with failures.

UNIT V P2P & DISTRIBUTED SHARED MEMORY**9**

Peer-to-peer computing and overlay graphs: Introduction – Data indexing and overlays– Chord – Content addressable networks – Tapestry. **Distributed shared memory:** Abstraction and advantages – Memory consistency models –Shared memory Mutual Exclusion.

TOTAL: 45 PERIODS**OUTCOMES:****At the end of this course, the students will be able to:**

- Elucidate the foundations and issues of distributed systems
- Understand the various synchronization issues and global state for distributed systems.
- Understand the Mutual Exclusion and Deadlock detection algorithms in distributed systems
- Describe the agreement protocols and fault tolerance mechanisms in distributed systems.

- Describe the features of peer-to-peer and distributed shared memory systems

TEXTBOOKS:

1. Kshemkalyani, Ajay D., and Mukesh Singhal. Distributed computing: principles, algorithms, and systems. Cambridge University Press, 2011.
2. George Coulouris, Jean Dollimore and Tim Kindberg, "Distributed Systems Concepts and Design", Fifth Edition, Pearson Education, 2012.

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1. Pradeep K Sinha, "Distributed Operating Systems: Concepts and Design", Prentice Hall of India, 2007.
2. Mukesh Singhal and Niranjan G. Shivaratri. Advanced concepts in operating systems. McGraw-Hill, Inc., 1994.
3. Tanenbaum A.S., Van Steen M., "Distributed Systems: Principles and Paradigms", Pearson Education, 2007.
4. Liu M.L., "Distributed Computing, Principles and Applications", Pearson Education, 2004.
5. Nancy A Lynch, "Distributed Algorithms", Morgan Kaufman Publishers, USA, 2003.



**DATA AND USER CONFIDENTIALITY
PRIVACY PRESERVATION IN DISTRIBUTED
SERVERS**



PROJECT REPORT

Submitted by

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In partial fulfillment for the award of the degree

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Certified that this project report on "DATA AND USER CONFIDENTIALITY
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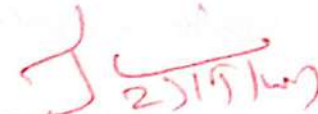
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Submitted for the Project Viva-Voice examination held on 23-05-2022



INTERNAL EXAMINER
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ABSTRACT

Outsourcing data and computation to cloud server provides a cost-effective way to support large scale data storage and query processing. However, due to security and privacy concerns, sensitive data (e.g., medical records) need to be protected from the cloud server and other unauthorized users. One approach is to outsource encrypted data to the cloud server and have the cloud server perform query processing on the encrypted data only. Now a day's cloud computing is used in many areas like industry, military colleges etc. to storing huge amount of data. We can retrieve data from cloud on request of user. To store data on cloud we have to face many issues. To provide the solution to these issues there are multiple ways. Cryptography and steganography techniques are more popular now-a-days for data security. Use of a single algorithm is not effective for high level security to data in cloud computing. In this project we have introduced new security mechanism using symmetric key cryptography algorithm and steganography. File security concerns arise because both user's application and program are residing in provider premises. The cloud provider can solve this problem by encrypting the files by using encryption algorithm. This paper presents a file security model to provide an efficient solution for the basic problem of security in local system environment. In this model, hybrid encryption is used where files are encrypted algorithms coupled with steganography which is used for the secured communication between users and the servers.

TABLE OF CONTENTS

CHAPTER 9

9.CONCLUSION

9.1.CONCLUSION

Data Security and Privacy of cloud data stored in Cloud Computing has full of challenges and of. Many research problems are yet to be come which are increase the security problem the cloud data storage's this paper present hybrid security algorithms using the symmetric key. The only difficult task is here that the key is secure. That are only accessible by the authorize user. And the purpose of using that key the is save the more time to store the large amount of data in cloud date storage. And the purpose of these algorithm is generally in cloud data storage (server storage system) not in travelling the data between the user by secure channel.

9.2.SCOPE FOR FUTURE ENHANCEMENT

There is scope for future development of this project. The world of computer fields is not static; it is always subject to be dynamic. The technology which is famous today becomes outdated the very next day. To keep abstract of technical improvements, the system may be further refined. So, it is not concluded. Yet it will improve with further enhancements. Enhancements can be done in an efficient manner. We can even update the same with further modification establishment and can be integrated with minimal modification. Thus the project is flexible and can be enhanced at anytime with more advanced features