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e-Governance and Data Mining

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Abstract: ***Information Technology has a vital role to play in all transactions that the government undertakes. Imagine a situation in which all interactions with government can be done through one counter 24 hours a day, 7days a week, without waiting in lines.This will not help the government to avoid corruption, and reach citizens directly, it will also helps government agencies in improving operational efficiencies, reduce project costs, speed up implementation cycles, and become more citizen-friendly across a variety of domains, including transport, urban development, land records, education, healthcare, ports and shipping, dairy, taxation, property registration, etc. In the near future this will be possible if governments are willing to decentralize responsibilities and processes, and if they start to use electronic means such as the Internet.***
Keywords: e-Governance, Data Warehousing, Data Mining, G2G,G2B,G2C

I. E-GOVERNANCE

The Chartered Institute for Public Finance and Accountability (CIPFA) includes the following elements which form the basis of a governance framework:

- Openness: access to information, communication with stakeholders and appointments to posts
- Financial and performance management – annual reports and corporate planning
- External review: audit arrangements and regulation
- Due process: compliance with the law, standards of behaviour and conflicts of interest
- Redress: complaints mechanisms and independent review.

The essence of good governance is based on the premise that the laws and procedures are transparent, clearly defined & understood by those governed and the implementation is both quick and smooth. To this effect, the governance in a developing country is a challenge, because a majority of the governed (citizens) are educationally & socio-economically challenged. More so, in developing countries, where the governments are formed through democratic means, the challenge of governance is much larger. Further, at times, the rules and procedures, though explicitly defined in the constitution or statutes, by themselves become hindrances in the path of governance due to lack of transparency and procedural clarities.

The solution to the foresaid lies in providing a mechanismthat is quick, interactive and provides a clear repository of rules and regulations, which extend help in decision making for both the governors and the governed.

The mechanism can be easily defined as ***e- governance***, that has the benefit of providing clear cut, transparent, interactive, easy to implement and just solutions (in dynamic mode) in the quickest possible time frame.

e-Governance is the public sector's use of information and communication technologies with the aim of improving information and service delivery, encouraging citizen participation in the decision-making process and making government more accountable, transparent and effective.[2]

e-Governance can be defined as a set of technology mediated processes that are changing both the delivery of public services and the broader interactions between citizens and government.

'E' in e-Government stands for much more than electronic and digital world, here 'E' denotes:

- E for Efficient – do it the right way
- E for Effective – do the right thing
- E for Empowerment – greater participation in governance process
- E for Enterprise – initiative and innovation
- E for Enhanced – enhanced user interface by providing 24/4/365 access to government information and services
- E for Online Environment

The recent advances in communication technologies and the Internet provide opportunities to transform the relationship between governments and citizens in a new way, thus contributing to the achievement of good governance goals. The purpose of implementing 'e-Governance' is to enhance good governance. With the help of IT the government will be able to provide better service with respect to time, efficiency, cost, use and accessibility.

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The concept of electronic governance chosen by the Council of Europe covers the use of electronic technologies in three areas of public action:

- relations between the public authorities and civil society
- functioning of the public authorities at all stages of the democratic process (electronic democracy)
- the provision of public services (electronic public services)[5].

II. DATA WAREHOUSING AND DATA MINING

The term Data Warehouse was coined by Bill Inmon in 1990, which he defined in the following way: "A warehouse is a subject-oriented, integrated, time-variant and non-volatile collection of data in support of management's decision making process" [1]. Warehousing is a key technology for advanced Decision Support Systems and Executive Information Systems. Data Warehouse is a set of hardware and software used to analyze huge amount of data for better decision making. In other words, a Data Warehouse is a repository of integrated data, available for queries and analysis. Data in a Data Warehouse is extracted from heterogeneous sources as and when it is generated. This makes it much easier and more efficient to run queries over data that originally came from different sources.

Data Warehousing is a process of maintaining centralizeddatabase that is used to maximize user access and analysis. DataWarehouse is a place where data is stored for archival, analysisand security purposes. Data Warehouse can be either asingle computer or many computers (servers) tied together tocreate one giant computer system. Data Warehouse plays dominant role in a decision support system. Data Mining is a tool that can be used to extract previously unknown patterns from large quantities of data, and is data driven. It uses mathematical and statistical calculations to uncover trends and correlations among the large quantities of data stored in a database. [3]

III. E-GOVERNANCE USING DATA WAREHOUSE AND DATA MINING (DWDM)

Data Mining is the process of digging or gathering information from various databases. Since gathering all this information is a necessity in order to increase sales and have a better relationship with clients, and with storage devices becoming cheaper, the idea of Warehousing Data came into being. This literally means that the data is collected in a central place where it is collected, transformed, analyzed and sorted as per therequirements for effective decision making.

Data Warehouse is a subject-oriented, integrated, time variant, non-volatile collection of data. Until there is a repository of accurate data across the enterprise value chain, application of mining tools to analyze and aid in strategic government decisions is impossible. In most cases, the difficult and resource consuming stage of development and deployment is Data Warehouse and Mining application development. The technology that exists with Data Mining and Warehousing is comparatively a new term but the technology is not. In number of cases government departments may come across shortage of resources in one department and excess of resources in the other. This could be due to non-availability of proper data and facilities to disseminate information. Even if government departments are computerized and networked more for the purpose of Internet usage and mail transfer, the information available in one department, which possess the data might not be utilized by other departments. This is because the information is stored in different formats, in different platforms and in heterogeneous database systems. While information that flows from top (fund sanction, allocation and disbursement details) is split up to generate information for lower levels, information that flows from grass root level. (such as expenditure details, benefits details, beneficiary details etc.) is consolidated to generate information for higher levels. Thispattern makes the entire vertical domain of ‘e-Governance’framework, an ideal domain for development of DataWarehousing and use of Data Mining applications. [3]

A. Mining E-Governance Data Warehouse

Data mining is a broad category of applications and technologies for gathering, storing, analyzing and providing access to data to help the decision makers in making decisions. Database Management systems provide the capability to access the stored data but this was only a small part of what could be gained from the data. Traditional on-line transaction processing systems, OLTPs, are good at putting data into databases quickly, safely and efficiently but are not good at delivering meaningful analysis in return. This is where Data Mining or Knowledge Discovery in Databases (KDD) comes into picture and has obvious benefits for any enterprise. Data mining techniques can be implemented rapidly on existing software and hardware platforms to enhance the value of existing information resources, and can be integrated with new products and systems as they are brought on-line. When implemented on high performance client/server or parallel processing computers, data mining tools can analyze massive databases quite efficiently.[4]

Data mining can be applicable to any kind of information repository which includes relational databases, data warehouses, transactional databases, flat files, World Wide Web and application oriented databases such as spatial databases, temporal databases and multimedia databases.

DWM, therefore is well suited for e-Governance applications in the G2G (Government to Government) , G2C (Government to Citizen) and in G2B (Government to Business) environment. For effective implementation of a DWM solution, the basic requirement is of a solid and reliable Data Warehouse on available 'e-Governance' data from different sources.

According to Gartner, e-governance will mature according to the following four phases [6]:

The first phase deals with presentation of e-governance on the web i.e providing the public (G2C & G2B) with relevant information. The format of the early government websites is similar to that of a brochure or leaflet. The value to the public is that government information is publicly accessible; processes are described and become more transparent, which improves democracy and service.

The second phase involves the interaction between government and the public (G2C & G2B) with various applications. People can ask questions via e-mail, use search engines, and download forms and documents. The complete intake of (simple) applications can be processed online within few hours. Internally (G2G) government organizations use LANs, intranets and e-mail to communicate and exchange data.

In third phase, the complexity of the technology increases, but customer (G2C & G2B) value is also higher. Complete transactions can be done without going to an office. Examples of online services are filing income tax, filing property tax, extending/renewal of licenses, visa and passports and online e voting. Phase three is made complex because of security and personalization issues. E.g. digital (electronic) signatures will be necessary to enable legal transfer of services. On the business side, the government is starting with e-procurement applications.

In fourth phase all information systems are integrated and the public can get G2C & G2B services at one(virtual) counter. One single point of contact for all services is the ultimate goal. The complex aspect in reaching this goal is mainly on the internal side, e.g. the necessity to drastically change culture, processes and responsibilities within the government institution (G2G). Government employees in different departments have to work together in a smooth and seamless way. The main objectives achieved in this phase include cost savings, efficiency and customer satisfaction reaching to highest possible level.

B. Need for Data Warehousing and Data Mining (DWDM) in e-Governance

With the use of DWDM technologies, policy makers can get key conclusions from large amount of data that can be a critical component of any 'e-Governance' initiative. Following are some examples of the same:

- To provide integrated data for implementation of plans on state or national level.
- Piracy and misuse of data will be reduced.
- To achieve operational effectiveness.
- To provide transparency for businesses.
- To have better understanding of requirements of citizens.
- To provide faster access of data for effective decision making.

C. Integration of Data Warehouse and Data Mining(DWDM) Technology with e-governance

The following benefits are being provided to end users by integrating DWDMwith 'e-Governance':

- No need to handle heterogeneous databases.
- Output will be obtained at multiple levels of granularity.
- No need to use sophisticated tools to derive knowledge from sea of data.
- Extensive Analysis of stored data to provide solution to complex queries
- Dependence on IT staff is being reduced.

IV. ORIGINS OF E-GOVERNANCE IN INDIA

E-governance originated in India during the seventies with a focus on in- house government applications in the areas of defence, economic monitoring, planning and the deployment of ICT to manage data intensive functions related to elections, census, tax administration etc .In early nineties, e-governance has seen the use of IT for wider sectoral applications with policy emphasis on reaching out to rural areas and taking in greater inputs from NGOs and private sector as well.

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There has been an increasing involvement of international donor agencies such as DfID, G-8, UNDP, and WB under the framework of e-governance for development. [7]

While the main emphasis has been primarily on automation and computerization, state endeavors to use IT include forays into connectivity, networking, setting up systems for processing information and delivering services. At a micro level, this has ranged from IT automation in individual departments, electronic file handling, access to entitlements, public grievance systems, service delivery for high volume routine transactions such as payment of bills, tax dues to meeting poverty alleviation goals through the promotion of entrepreneurial models and provision of market information. The thrust has varied across initiatives, with some focusing on enabling the citizen-state interface for various government services, and others focusing on bettering livelihoods. [7]

Table I: e-governance Initiatives

State/Union Territory	Initiatives covering departmental automation, user charge collection, delivery of policy/programme information and delivery of entitlements
Andhra Pradesh	e-Seva, CARD, VOICE, MPHS, FAST, e-Cops, AP online—One-stop-shop on the Internet, Saukaryam, Online Transaction processing
Bihar	Sales Tax Administration Management Information
Chattisgarh	Chhattisgarh Infotech Promotion Society, Treasury office, e-linking project
Delhi	Automatic Vehicle Tracking System, Computerisation of website of RCS office, Electronic Clearance System, Management Information System for Education etc
Goa	Dharani Project
Gujarat	Mahiti Shakti, request for Government documents online, Form book online, G R book online, census online, tender notice.
Haryana	Nai Disha
Himachal Pradesh	Lok Mitra
Karnataka	Bhoomi, Khajane, Kaveri
Kerala	e-Srinkhala, RDNet, Fast, Reliable, Instant, Efficient Network for the Disbursement of Services (FRIENDS)
Madhya Pradesh	Gyandoot, Gram Sampark, Smart Card in Transport Department, Computerization MP State Agricultural Marketing Board (Mandi Board) etc
Maharashtra	SETU, Online Complaint Management System—Mumbai
Rajasthan	Jan Mitra, RajSWIFT, Lokmitra, RajNIDHI
Tamil Nadu	Rasi Maiyams–Kanchipuram; Application forms related to public utility, tender notices and display

(Adapted from "http://dqindia.ciol.com")

V. CHALLENGES FOR IMPLEMENTATION OF E-GOVERNANCE IN INDIA

E-governance in India is in its initial stage. The National E-Governance Plan (NEGP) is the umbrella under which all e-governance initiatives are taking place [8]. However, there are limited successful and completed e-governance projects like e-Seva, CARD, etc.

There seems to be lack of insight among the decision-makers. The ICT polices and strategies of India are not covering the e-governance aspects at the national level. No political party ever considers e-governance as an important part of their political agenda before elections. Issues like reservations and inflation are included in national debates but not e-governance.

India has to accept that computerization of traditional governmental and public functions are not e-governance. The emphasis should be laid to empower the citizens with the power of ICT. The governmental services have to be made user-friendly as well as productive [8].

Due to the absence of the e-governance, there is just paper work which leads to the lack of transparency in governmental dealing. In spite of the Right to Information Act, 2005, the public information officers keep on denying the relevant information on insubstantial grounds. In exceptional cases, citizens may get some information but by and large very few people get the actual information.

Accountability among governmental officers is missing. In the absence of proper mechanism the officers cannot be punished for their violations and negligence. This results in a casual attitude towards public good and e-governance. A lot of problems can be solved by fixing accountability and time-bound progress requirements [8].

Public participation in both policy making and governmental decisions is missing. If it is possible to get the opinion of those who are somehow surviving at the grassroots level the majority of problems can be solved. However, the fact is that grassroots level problems are never solved [8].

VI. CONCLUSION

An inter relationship between 'e-Governance and Data Warehousing and Mining' is presented in the paper. This is the best time to introduce DWDM technology into the arena of ‘e-Governance’ to further strengthen the system. In order to incorporate the DWDM system and implement it, initially few sectors have to be identified and a DWDM system can be built over it as a proof of concept. Once the desired results are achieved, the same can be replicated in other sectors of the government. Once the complete system is in place at the national level for use, a knowledge bank can be created for the entire ‘e-Governance’ environment.[10]

‘e-Government’ along with the most powerful media available today i.e. the Internet has the capability to remove a very large set of problems we have in our system with a click of a mouse. It is also true that once this becomes a reality it will give a boost to the rights of an ordinary citizen. The advantages of the solution for ‘e-Governance’ using Data Warehousing and Data Mining for statistical analysis, and ad-hoc reporting are even greater when the distribution of those applications can be accomplished using the web.

VII. FUTURE SCOPE

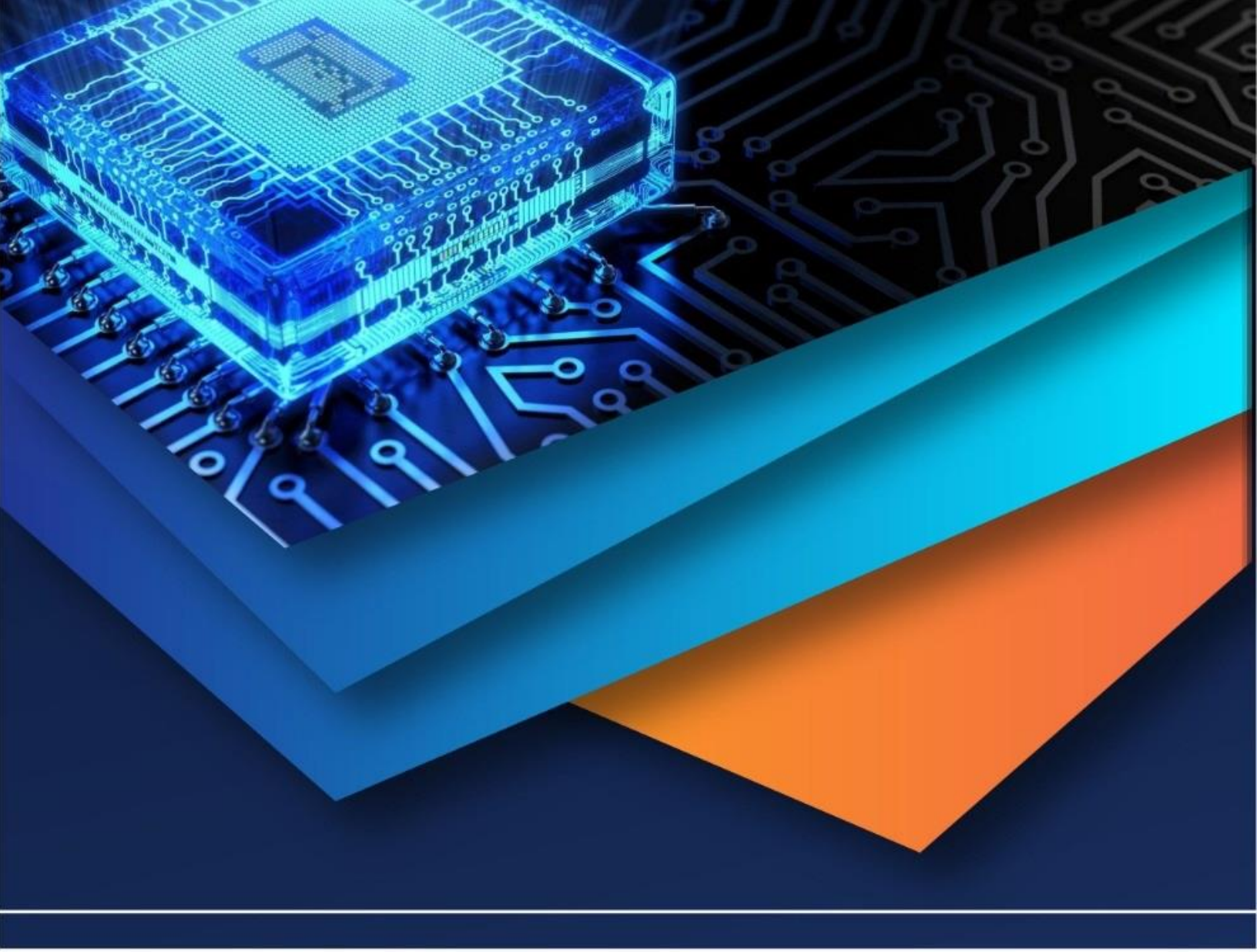
Despite the best intentions, basic flaw exists in the government’s strategy i.e. strategic inclusion of the entire population, not just the masses residing in the metros, smaller towns and semi-rural areas. The government keeps talking about extending services to the remote areas of the country, but it is not reflected in the kind of applications being rolled out by state and central governments. For instance hardly anything substantial has being done in the case of health and education services which affect virtually every citizen of this country. Access to Internet is not available to the masses in rural areas. Hence, despite having systems for facilitating electronic transactions, people still have to make trips to their local center, which more often than not is plagued with infrastructural issues. For extending the boundaries of ‘e-Governance’ into the rural areas we have to visualize beyond computers and try to explore other commonly available media like television, cable networks, radio, mobile phones, etc. To get the real benefits of ‘e-Governance’ we have to first educate the end users i.e. the citizens how to use and reap benefits from IT. The key to take ‘e-Government’ into rural areas is to ensure that technology doesn't end up as an intimidating tool but blends itself to existing social and cultural ethos. In order to reach the finishing line, the governments will have to address some key concern areas to effectively overcome the challenges. The key areas are:

1) IT Skill Sets
2) Standardization
3) Local Languages
4) Technology
5) Infrastructure
6) Security
7) Citizen Services
8) Public-Private Partnership (PPP)

REFERENCES

[1] Shobana J, Ch. Gangadhar, Rakesh Kumar Arora, P.N.Renjith, J. Bamini, Yugendra Devidas (2023), E-commerce customer churn prevention using machine learning-based business intelligence strategy, Measurements:Sensors, Volume 27, June 2023 (DOI: 10.1016/j.measen.2023.100728) ISSN: 2665-9174
[2] Arora, R.K. , Gupta, M.K., Singh S, Saroop S (2024), Big Data in Medicine and Public Health, Obstetrics and Gynaecology Forum, O&G Forum, June 2024, Vol 34 No. 3S ,1330-1335,ISSN:1029-1962
[3] Gupta, M.K., Arora, R.K, Khatri V, Panchal P, Meena, L.K, (2024), Personalized Healthcare Systems Using AI, NanoTechnology Perceptions, Oct 2024, Vol 20, S13 ,437-452, ISSN:1660-6795
[4] Jacob,V. , Tandon, A. , Jeevitha, S., Arora, R.K., Laddha, S., Salunkhe, S. , Portable Healthcare Computing and Clinical Decision Support System Enabled by Artificial Intelligence,(2022) Int. J. of Engineering Systems Modelling and Simulation, Vol 13, Number 3,pp 228-233, June 2022(https://doi.org/10.1504/IJESMS.2022.123955)ISSN: 1755-9758
[5] W.H. Inmon, “Building the Data Warehouse”, Third Edition, WILEYdreamtech India Pvt. Ltd.
[6] The E-Government Magazine for Asia and The Middle East, “eGov”, published in technical collaboration with Centre of Science, Development and Media Studies
[7] Pieter Andriaans, Dolf Zantinge, “DATA MINING”, Addison Wesley

[8] Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database Systems", Fifth Edition, Pearson Education.
[9] Singh S.P, Upreiti K, Jain R, Arora R.K*, Rajnarayanan B, Deshpande N.D(2025), Identification of Brain Tumors using CNN and ML with Diverse Feature Selection Techniques, Journal of Apllied Science and Technology Trends, June 2025, Vol. 6, Issue 1, 74-86, ISSN:2708-0757
[10] Reddy P., Naresh P, Arora R.K, Rajnarayanan B, Anusha(2025), Framework For Renewable Energy Adoption And Environmental Sustainability In Urban Infrastructure, International Journal of Environmental Sciences, June 2025, Vol 11, No.11s, ISSN:2229-7359
[11] Lamba J.K, Malhotra Ruchi, Gupta Himani, Jain Namrata, Arora R.K (2024), Factors influencing E-Commerce Adoption on Sustainability of MSME ,Educational Administration:Theory and Practice, Volume 30, No. 6, June 2024(Doi:.10.53555/kuey.v30i6.5594) ISSN: 2148-2403.
[12] Narayanan S., Arora, R.K., Gangwar S., Kandhasamy J., Ratheesh, Murali K.(2024), Ultra-low latency communication technique for augmented reality application in mobile edge computing, Int. J. of Engineering Systems Modelling and Simulation, Vol 15, Number 3,pp 97-105, May 2024(https://doi.org/10.1504/IJESMS.2024.138288) ISSN: 1755-9758
[13] Sharma Yogita, Singh Priyanka, Singh Prerna, Arora R.K.(2023), Comparative Study of Food Ordering Applications, Journal of Emerging Technologies and Innovative Research, Volume 10, Issue 5, May 2023
[14] Shobana J, Ch. Gangadhar, Rakesh Kumar Arora, P.N.Renjith, J. Bamini, Yugendra Devidas (2023), E-commerce customer churn prevention using machine learning-based business intelligence strategy, Measurements:Sensors, Volume 27, June 2023 (DOI: 10.1016/j.measen.2023.100728) ISSN: 2665-9174 .
[15] Jacob,V. , Tandon, A. , Jeevitha, S., Arora, R.K., Laddha, S., Salunkhe, S. , Portable Healthcare Computing and Clinical Decision Support System Enabled by Artificial Intelligence,(2022) Int. J. of Engineering Systems Modelling and Simulation, Vol 13, Number 3,pp 228-233, June 2022(https://doi.org/10.1504/IJESMS.2022.123955)ISSN: 1755-9758.
[16] Arora, R.K. and Gupta, M.K., Bhati, B.S. , (2021), Analysis of Various Covid-19 Prediction Techniques, IEIE Transactions on Smart Processing and Computing , Volume 10, Number 4, August 2021. (DOI:10.5573/IEIESPC.2021.10.4.323) ISSN:2287-5255.
[17] Goyal,D. , Sachin, Gupta, R. , Arora, R.K., (2021), Human Emotion Detection System, Journal of Huazhong University of Science and Technology, Vol 50,Issue 7,pp 1-4, July 2021.
[18] Pandey, S. , Sharma, S. , Kumar, S. , Arora, R.K., (2021), Analysis of Weather Forecasting Techniques, I J. of Scientific Research in Computer Science, Engineering and Information Technology, Vol. 7, Issue 4, pp 80-85, July-August,21 (DOI: 10.32628/CSEIT217318) (UGC Journal No. 64718).
[19] Pandey, S. , Sharma, S. , Kumar, S. , Arora, R.K., (2021), Weather Forecast through Data Mining, I J. of Scientific Research in Computer Science, Engineering and Information Technology, Vol. 7, Issue 3, pp 90-95, May-June,21 (DOI: 10.32628/CSEIT217318) (UGC Journal No. 64718).
[20] Arora,R.K. , Jain, C. , Gupta, Y.(2020) , Automated System for Monitoring Smart Farms, I J. of Modern Trends in Engineering and Research, Vol. 7,Issue 5, pp 32-38, May 2020 (DOI: 10.21884/IJMTER.2020.7029.1C51F).
[21] Sharma, A. , Mishra, A. , Choudhary, K. , Arora, R.K.(2020) , Mobile Smoke Monitoring Device, International Research Journal of Engineering and Technology, Vol.7, Issue 5, pp 5083- 5085 , May 2020
[22] Anuradha, Kumar, H., Arora,R.K.(2020), Use of Activation Values and Weight Space by Activation and Synaptic Dynamics for Network Reliability Measurement, I.J. of Computer Applications, Vol. 176, No. 14, pp 7-11, April 2020.
[23] Gupta, M.K., Arora, R.K. and Bhati, B.S. (2019), Study of Concurrency Control Techniques in Distributed DBMS, I.J. of Machine Learning and Networked Collaborative Engineering, Vol. 2, No. 4, pp 180-187 (DOI: 10.30991/IJMLNCE.2018v02i04.005).
[24] Arora, R.K. and Gupta, M.K. (2017), e-Governance using Data Warehousing and Data Mining, I.J. of Computer Applications, Vol. 169, No. 8, pp 28-31, Jul 2017.
[25] Kumar,S. and Arora, R.K (2015), Analyzing Customer Behavior through Data Mining , I J. of Computer Applications, Technology and Research, Volume 4, Issue 12, Dec 2015.
[26] Arora, R.K and Badal,D.(2014), Placement Assistance through Data Mining, I J. of Advanced Research in Computer Science and Software Engineering, Volume 4, Issue 7, July 2014.
[27] Arora, R.K and Badal,D.(2014), Mining Association Rules to Improve Result, I J. of Computer Science and Mobile Technology, Volume 3, Issue 1, Jan 2014.
[28] Arora, R.K and Badal,D.(2013), Subject Distribution using Data Mining, I J. of Research in Engineering and Technology, Volume 2, Issue 12, Dec 2013.
[29] Arora, R.K and Badal,D.(2013), Admission Management through Data Mining using WEKA, I J. of Advanced Research in Computer Science and Software Engineering, Volume 3, Issue 10, Oct 2013.
[30] Arora, R.K and Badal,D.(2013), Predicting Student's attrition through Data Mining, I J. of Computer Science and engineering Technology, Volume 4, Issue 10, Oct 2013.
[31] Arora, R.K and Badal,D.(2013), Evaluating Student's Performance using k-means clustering, I J. of Computer Science and Technology , Volume 4, Issue 2, June 2013.
[32] Kumar, S. and Arora, R.K.(2012),Cloud Computing as a service over internet , I J. of Advances in Computer Network and Security, Volume 3, Issue 1, March 2013.
[33] Bakshi, A. , Arora, R.K. (2013), Cloud Computing as a service over Internet, UACEE I J. of Advances in Computer Network and its Security, Volume 3, Issue 1, pp 74-80, 2013
[34] Arora, R.K and Badal,D.(2012), Location wise Student Admission Analysis, I J. of Computer Science, Information Technology and Security, Volume 2, No 6, Dec 2012.
[35] Arora, R.K. and Gupta, M.K. (2011), Priority Queue Based Implementation of Semaphore for RTOS, I J. of Advanced Engineering & Applications, Jan 2011.
[36] Arora, R.K. and Gupta, M.K. (2010), Data Mining: Scope Out Valuable Resources from Mountains of Information, IIMT Business Review, Vol. 2, No.2, pp 32-37, Jul 2010.
[37] http://www.coe.int
[38] http://www.ftpiicd.org
[39] http://dqindia.ciol.com
[40] http://www.merinews.com
[41] http://makingendsmeet.idea.gov.uk



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