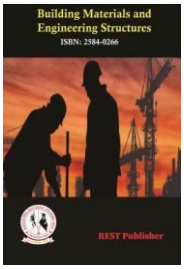
Building Materials and Engineering Structures
Vol: 2(1), March 2024
REST Publisher; ISSN: 2584-0266 (Online)
Website: https://restpublisher.com/journals/bmes/
DOI: http://doi.org/10.46632/bmes/2/1/5



A Gra Method for Multi-Attribute Decision Making with Incomplete Weight Information in A Manufacturing Environment

***Vimala Saravanan, Prabakaran Nanjundan, Manjulaselvam, M. Ramachandran**
REST Labs, Kaveripattinam, Krishnagiri, Tamil Nadu,India.
*Corresponding author Email: vimalarsri@gmail.com

Abstract: *Today, human activities are guided by the notion of sustainable development. Future growth will mostly be influenced by sustainable transportation. Today, this is not the case, and road transportation, in particular, plays a role in this. A paradigm change for the development of sustainable transportation Inland Rivers will inevitably carry more traffic than other alternative routes as a whole. The rationale for enhancing the sustainability of inland canal navigation is discussed in this lecture. Investigating university attendance among Norwegian university students during the winter months for venturing out and using public transportation (PT) was the aim of this study. Investigating traffic attitudes and environmental elements as potential indicators of travel preferences with 441 college students at Norway's Dragvoll and Glshaugen campuses of two universities. 206 men and 229 women participated in this cross-sectional self-report survey. Beyond the aforementioned contextual elements and transportation strategies. The explained variance is increased by the traffic priorities. Exercise transportation priority with increased utilization of active transportation. Flexibility is valued more when it comes to active transit use. Previous studies have shown that a more favorable environment The utilization of active transportation is correlated with attitudes. Comfortable transport attitude is one of the psychological variables in PT. Use is linked to a reduced degree of PT, maybe while employing this modality. conveys discontent. In general, psychological factors (transport priorities, transport attitudes) explained less of the variation in fixed transit use than situational ones (such as campus location, journey distance). Benefits of active transportation in terms of health and the environment Reminding children could be an effective strategy for enhancing this form of transportation. Later in life, increased PT comfort might stimulate sustained use of this treatment method. However, wintertime saw more static traffic. The ability to employ a mode depends on removing situational restrictions, utilization of transportation. Comfortable transport attitude is one of the psychological variables in PT.*

Keywords: *manufacturing, GRA method.*

1. INTRODUCTION

Manufacturing resource planning's primary goal is to provide maximum dependability, the amount of material released at the lowest cost and best time possible while adhering to specific restrictions. Availability of the necessary resource(s) is one such system. Material requirements planning (MRP) logic is frequently used to carry out planning in a manufacturing context (Cho, S.C.L. and S.M. Said, 2006; Volkmann, T.E. et al., 1988), but MRP logic has a significant limitation in dealing with planning uncertainty. In today's fiercely competitive global manufacturing climate, on-time delivery is crucial, and cost-effective manufacturing is becoming more and more crucial. Planning systems are typically very unpredictable and dynamic contexts in industrial settings, where numerous interruptions (mainly randomness) prohibit the implementation of properly established production schedules. Lean manufacturing is frequently seen as a crucial tactic for manufacturing businesses looking to reach world-class performance (Rinehart, Huxley, & Robertson, 1997). 1997 Robertson & Growing manufacturing is essential to raising living standards in emerging nations. Growth is slowed by a lack of natural resources and an increase in energy consumption, but manufacturing developing nations are attracting attention from around the world because to their unrealized potential for growth based on natural resources and people resources, as well as their generally laxer extra environmental regulations [1]. The need for resources and energy production is rising as a result of growing economies with rapid expansion. In actuality, more than 30% of the energy produced globally is used by industry [1]. The environmental impact associated with producer energy usage directly contributes to global issues like sustainability and climate change in addition to raising the price of energy and

Copyright@2023 REST Publisher

commodities [2]. Growth is slowed by a lack of natural resources and an increase in energy consumption, but manufacturing developing nations are attracting attention from around the world because to their unrealized potential for growth based on natural resources and people resources, as well as their generally laxer extra environmental regulations [1]. The need for resources and energy production is rising as a result of growing economies with rapid expansion. In actuality, more than 30% of the energy produced globally is used by industry [1]. The environmental impact associated with producer energy usage directly contributes to global issues like sustainability and climate change in addition to raising the price of energy and commodities [2].

2. MANUFACTURE ENVIORNMENT

Different people interpret uncertainty differently. Uncertainty, for instance, can refer to an estimate of the measurement error (Filial, R.S., and D.E. Beasley, 1991). Lack of a precise grasp of events or processes is uncertainty. This work uses a scenario planning approach to assess the project planning issue, similar to Ay et al Gupta (1994). This method offers a connection to decision theory that not only aids in understanding the robustness and sustainability metrics frequently used in the literature but also offers a mechanism to define numerous additional strengths and sustainability. More details about this source material and related translation information Required source text Feedback from Page panels In order to create value, a lean manufacturing strategy investigates the benefits of rethinking the customer perspective and manufacturing procedures (Womack & Jones, 2003). Systems are made to produce high-quality products with little waste (Shaw & Ward, 2003; Kennedy & Masque l, 2006). The "grass" is called lean manufacturing. Producing exclusively in response to consumer need is the plan. Companies in these ecosystems are reorganized into cells and value streams that enable them to concentrate on value (Womack & Jones, 2003). all of the products' or product families' created functions The primary issue with cloud manufacturing is matching specialized manufacturing needs with dispersed manufacturing resources, as was covered in the preceding section. This procedure can sometimes be as simple as checking the needs of the services against the services themselves, but other times it calls for a skilled engineer to look into the technical challenges of carrying out the task with the available resources. Fuzzy TOPSIS is a useful technique. Human reasoning in practical settings [32]. To prioritize GM constraints, fuzzy theory is applied to model parameters for decision-making. A trigonometric fuzzy can be defined in fuzzy set theory by triple a number, and the substitution criteria are the words that turn the numbers into fuzzy ones. Table 2 lists alternatives for ranking GM obstacles in terms of selection and evaluation criteria. As previously mentioned, DD plays a significant role in a comprehensive CPS, which has been applied with success in numerous. Military [12], health [13], and manufacturing [14] are some of the industries. Therefore, the fundamental basis for DD installation is comprehending and implementing the CPS architecture. Despite those successes in a broader context, this section restricts its focus by reviewing work pertaining to both CPS frameworks and DT implementations, identifying gaps that arise from the existing literature, and arguing that sustainability has not fallen off the corporate agenda despite the current economic climate. Employers of Sustainability Management A survey finds that organizations' levels of adoption differ, nevertheless. An MRP-controlled manufacturing environment simulation model has been created as a result of this research.

3. GRA METHOD

Deng invented the Gray Relational Analysis (GRA) method, which has been successfully applied to address a number of MCDM issues. It is necessary to translate the GRA's performance of all alternatives first into a relative order. The creation step is the gray relative. These sequences claim that a successful destination is punished. The gray correlation coefficient between the top target sequences is then determined for each comparison sequence. This gray conversation will conclude. For a better target order between each comparison sequence, the coefficients are used to calculate the gray correlation degree. An alternative translation of a comparison between the ideal target line and itself the greatest alternative is one with a lot of gray contact. We address MCDM issues. We suggest an expanded GRA technique in which the quantitative values are given as language variables with interval values and the quantitative weights are unknown. represent interval values of conventional GRA Some criterion weighting optimization models have been developed based on the fundamental concept. Subsequently, from a substitution, a comparative sequence translated for the computational for MCDM, extended the steps of the GRA technique are given. They include sorting the options and choosing the preferred one. Explain the GRA technique in brief. Introducing MCDM issues with interval-valued with unknown weights The GRA approach was created to address issues with the suggested method. A numerical example using the application is looked into to clarify compatibility for a software company's Select Computer Analysis Engineer. Globally, Asia uses Gray Relational Analysis (GRA). It is an effect assessment model that bases its conclusions on how closely two orders are related. determines how similar or different something is. The study of system-affecting factors is the goal of GRA. It is data that is both independent and correlated and is based on relationships found in series. GRC (Gray Correlation Coefficient) is used to estimate relationships between series and reference series using GRA.

Copyright@2023 REST Publisher

4. RESULT AND DISCUSSION

TABLE 1. Manufacturing Environment

	Load capacity	Repeatability	Maximum tip speed	Memory capacity	Manipulator reach
Cincinnati Milacron T3-726	31.08	139.53	29.15	22.05	36.05
Cybotech V15 Electric Robot	29.12	142.97	33.69	27.30	6.00
Hitachi America Process Robot	24.08	122.58	29.18	23.10	45.36
Animation PUMA 500/600	23.17	128.28	24.60	17.59	34.00
United States Robots Maker 110	33.33	186.41	27.96	18.89	45.00

Table 1 shows the Manufacturing Environment for Grey relational analysis. Load capacity, Repeatability, Maximum tip speed, Memory capacity, Manipulator reach and Cincinnati Milacron

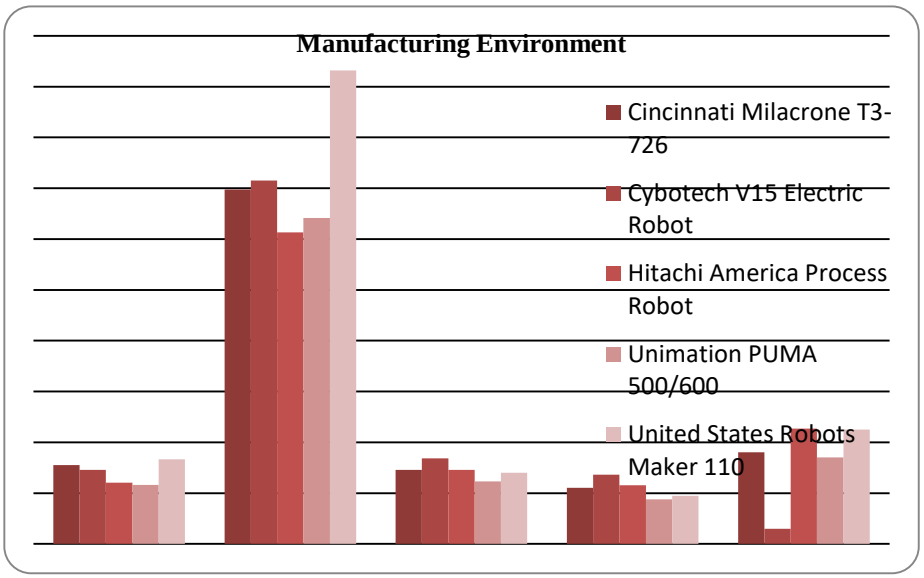


FIGURE 1. Manufacturing Environment

Figure 1 Shows the Manufacturing Environment for Grey relational analysis Load capacity, Repeatability, Maximum tip speed, Memory capacity,

TABLE 2. Normalized Data

Load capacity	Repeatability	Maximum tip speed	Memory capacity	Manipulator reach
0.7785	0.2655	0.2655	0.5407	0.2365
0.5856	0.3194	0.3194	0.0000	1.0000
0.0896	0.0000	0.0000	0.4325	0.0000
0.0000	0.0893	0.0893	1.0000	0.2886
1.0000	1.0000	1.0000	0.8661	0.0091

Table 2 shows the Normalized data for Manufacturing Environment.

TABLE 3. Deviation sequence

Deviation sequence				
Load capacity	**Repeatability**	**Maximum tip speed**	**Memory capacity**	**Manipulator reach**
0.2215	0.7345	0.7345	0.4593	0.7635
0.4144	0.6806	0.6806	1.0000	0.0000
0.9104	1.0000	1.0000	0.5675	1.0000
1.0000	0.9107	0.9107	0.0000	0.7114
0.0000	0.0000	0.0000	0.1339	0.9909

Copyright@2023 REST Publisher

Table 3 shows the Deviation sequence for Manufacturing Environment.

TABLE 4. Grey Relation Coefficient

Load capacity	Repeatability	Maximum tip speed	Memory capacity	Manipulator reach
0.6930	0.4050	0.4050	0.5212	0.3957
0.5468	0.4235	0.4235	0.3333	1.0000
0.3545	0.3333	0.3333	0.4684	0.3333
0.3333	0.3544	0.3544	1.0000	0.4128
1.0000	1.0000	1.0000	0.7888	0.3354

Table 4 shows the Grey relation coefficient for Manufacturing Environment.

TABLE 5. Result of final GRG Rank

	GRG	Rank
Cincinnati Milacron T3-726	0.4840	4
Cybotech V15 Electric Robot	0.5454	2
Hitachi America Process Robot	0.3646	5
Animation PUMA 500/600	0.4910	3
United States Robots Maker 110	0.8248	1

Table 5 shows the Result of final GRG Rank of GRA for Manufacturing Environment. United States Robots Maker 110 is first ranking, Cybotech V15 Electric Robot is second ranking, Animation PUMA 500/600 is third ranking, Cincinnati Milacron T3-726 is fourth ranking and Hitachi America Process Robot is fifth ranking.

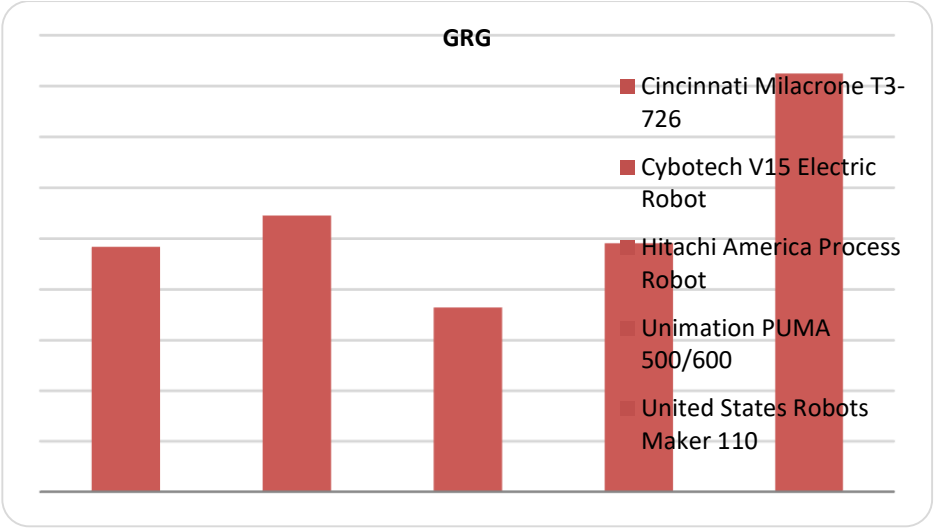


FIGURE 2. GRG

Figure 2shows the GRG of GRA for Manufacturing Environment.

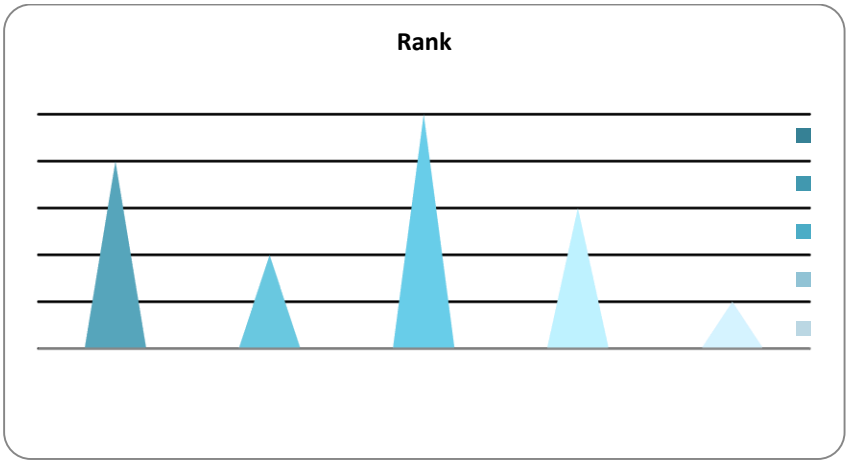


FIGURE 3. Shown the Rank

Copyright@2023 REST Publisher

Figure 3 United States Robots Maker 110 is first ranking, Cybotech V15 Electric Robot is second ranking, Animation PUMA 500/600 is third ranking, Cincinnati Milacron T3-726 is fourth ranking and Hitachi America Process Robot is fifth ranking.

5. CONCLUSION

The acquisition, utilization, and allocation of finite resources are all part of production planning and control. Production actions to more effectively and efficiently satisfy client demand within a set time range. Staffing numbers, production levels, allocation over time, and the order of production flows are examples of typical decisions. Planning and controlling production in volves optimization by definition. The challenges are coming up with a strategy to satisfy demand while keeping costs low or while maximizing profits. Gaining and sustaining advantages requires taking unpredictability into account. According to the findings, 119 out of 244 plants are in a lean accounting situation. Given that adopters remarked that it has been correctly applied in lean manufacturing, lean accounting is not surprising. Demonstrates the deliverables for putting lean principles (such as lean manufacturing) into effect. Although study has been done to create the best service plans for a certain task, there are some real-world issues.

REFERENCE

[1]. L. Johnsen, Soenke. "Hide and seek in the open sea: pelagic camouflage and visual countermeasures." Annual review of marine science 6 (2014): 369-392.

[2]. Davuluri, Sandeep Kumar, Lakshman Kumar Kanulla, and Lakshmi Narayana Pothakamuri. "A Hybrid ML Sentiment Analysis for Climate Change Management in Social Media." *Text Mining and Sentiment Analysis in Climate Change and Environmental Sustainability* (2024): 1.

[3]. AlShourbaji, I., Helian, N., Sun, Y., Hussien, A. G., Abualigah, L., & Elnaim, B. (2023). An efficient churn prediction model using gradient boosting machine and metaheuristic optimization. Scientific Reports, 13(1), 14441.

[4]. Ramachandran, Rajesh, and J. Sujathamalini. "Promoting Diversity And Inclusion In Higher Education: Strategies And Best Practices." Educational Administration: Theory and Practice 30, no. 4 (2024): 6997-7007.

[5]. Davuluri, Mr Sandeep Kumar, Ramesh Pettela, Deepali Virmani, and Mr Ashwani Gupta. "Predicting Mental Health Using Robotics: An Integration With Machine Learning." Nanotechnology Perceptions (2024): 964-977.

[6]. Bedini, Roberto, Maria Grazia Canali, and Andrea Bedini. "Use of camouflaging materials in some brachyuran crabs of the Mediterranean infralittoral zone," Cahiers de biologie marine 44, no. 4 (2003): 375-384.

[7]. Cronin, Thomas W. "Camouflage: Being invisible in the open ocean." Current Biology 26, no. 22 (2016): R1179-R1181.

[8]. Denton, Eric James, John B. Gilpin-Brown, and Paul G. Wright. "The angular distribution of the light produced by some mesopelagic fish in relation to their camouflage." Proceedings of the Royal Society of London. Series B. Biological Sciences 182, no. 1067 (1972): 145-158.

[9]. Sudhir, Ramadass, and S. Santhosh Baboo. "A Efficient Content based Image Retrieval System using GMM and Relevance Feedback." International Journal of Computer Application 72, no. 22 (2013).

[10]. Verma, Pradeep. "Effective Execution of Mergers and Acquisitions for IT Supply Chain." *International Journal of Computer Trends and Technology* 70, no. 7 (2022): 8-10.

[11]. Singh, Prabhjot, Varun Dixit, and Jaspreet Kaur. "Green healthcare for smart cities." In Green and Smart Technologies for Smart Cities, pp. 91-130. CRC Press, 2019.

[12]. Kanulla, Naga Sathya Lakshman Kumar. "A Qualitative Examination of SAP Enterprise Resource Planning System in Pharmaceutical Distribution Companies." PhD diss., University of the Cumberlands, 2021.

[13]. Al-Shourbaji, I., Kachare, P. H., Abualigah, L., Abdelhag, M. E., Elnaim, B., Anter, A. M., & Gandomi, A. H. (2022). A deep batch normalized convolution approach for improving COVID-19 detection from chest X-ray images. Pathogens, 12(1), 17.

[14]. Singh, Anuragini, and Rajesh Ramachandran. "Study on the effectiveness of smart board technology in improving the psychological processes of students with learning disability." *Sai Om Journal of Arts & Education* 1, no. 4 (2014): 1-6.

[15]. Yuk, Hyunwoo, Shaoting Lin, Chu Ma, Mahdi Takaffoli, Nicolas X. Fang, and Xuanhe Zhao. "Hydraulic hydrogel actuators and robots optically and sonically camouflaged in water." Nature communications 8, no. 1 (2017): 14230.

[16]. Zylinski, Sarah, and Sönke Johnsen. "Mesopelagic cephalopods switch between transparency and pigmentation to optimize camouflage in the deep." Current Biology 21, no. 22 (2011): 1937-1941.

[17]. Dixit, Varun, and Davinderjit Kaur. "A Systematic Review for Sustainable Software Development Practice and Paradigm." Journal of Computational Analysis and Applications (JoCAAA) 33, no. 06 (2024): 170-185.

[18]. Jakka, Geethamanikanta, N. S. L. K. Kanulla, and Oludotun Oni. "Analysing The Need Of Big Data Owners To Regularly Update Security Measures." *Journal of Pharmaceutical Negative Results* (2022): 8417-8425.

[19]. Al-Shourbaji, I., & Zogaan, W. (2022). A new method for human resource allocation in cloud-based e-commerce using a meta-heuristic algorithm. Kybernetes, 51(6), 2109-2126

[20]. Joseph, J. Armstrong, K. Keshav Kumar, N. Veerraju, Sudhir Ramadass, Sreekumar Narayanan, and R. G. Vidhya. "Artificial intelligence method for detecting brain cancer using advanced intelligent algorithms." In 2023 4th International Conference on Electronics and Sustainable Communication Systems (ICESC), pp. 1482-1487. IEEE, 2023.

[21].

Copyright@2023 REST Publisher

[22]. Jawarneh, Malik, M. Jayakrishna, Sandeep Kumar Davuluri, S. V. Ramanan, Pavitar Parkash Singh, and J. Armstrong Joseph. "Energy Efficient Lightweight Scheme to Identify Selective Forwarding Attack on Wireless Sensor Networks." In International Conference on Intelligent Computing and Networking, pp. 425-436. Singapore: Springer Nature Singapore, 2023.

[23]. Allen, Justine J., Lydia M. Mäthger, Kendra C. Buresch, Thomas Fetchko, Meg Gardner, and Roger T. Hanlon. "Night vision by cuttlefish enables changeable camouflage." Journal of Experimental Biology 213, no. 23 (2010): 3953-3960.

[24]. Claes, Julien M., Dag L. Aksnes, and Jérôme Mallefet. "Phantom hunter of the fjords: camouflage by counterillumination in a shark (Etmopterus spinax)." Journal of Experimental Marine Biology and Ecology 388, no. 1-2 (2010): 28-32.

[25]. Forsyth, Isla. "Subversive patterning: The surficial qualities of camouflage." Environment and Planning A 45, no. 5 (2013): 1037-1052.

[26]. Sudarsanan, Sajeesh, Hiran Das K. Ramkumar Thirumal, Salim Shaikh, and Rajesh Ramachandran. "Identifying the Scope of Reattach Therapy for Social Rehabilitation for Children with Autism." Journal for ReAttach Therapy and Developmental Diversities 6, no. 10s (2023): 681-686.

[27]. Dixit, Varun, and Davinderjit Kaur. "Development of Two-Factor Authentication to Mitigate Phishing Attack." *Journal of Software Engineering and Applications* 17, no. 11 (2024): 787-802.

[28]. Chidipothu, Vamsi Krishna, Lakshman kumar Kanulla, Chaitanya Kiran Pandey, Sandeep Kumar Davuluri, Mohit Tiwari, and Devesh Pratap Singh. "Design and Implementation of Block Chain with Cybersecurity Scheme for Fog Based Internet of Things." In *2023 6th International Conference on Contemporary Computing and Informatics (IC3I)*, vol. 6, pp. 1409-1415. IEEE, 2023

[29]. Al-Shourbaji, I., Alhameed, M., Katrawi, A., Jeribi, F., & Alim, S. (2022). A Comparative Study for Predicting Burned Areas of a Forest Fire Using Soft Computing Techniques. In ICDSMLA 2020: Proceedings of the 2nd International Conference on Data Science, Machine Learning and Applications (pp. 249-260). Springer Singapore.

[30]. Yadav, Amar Pal, Sandeep Kumar Davuluri, Piyush Charan, Ismail Keshta, Juan Carlos Orosco Gavilán, and Gaurav Dhiman. "Probabilistic scheme for intelligent jammer localization for wireless sensor networks." In International conference on intelligent computing and networking, pp. 453-463. Singapore: Springer Nature Singapore, 2023.

[31]. Vidhya, R. G., J. Seetha, Sudhir Ramadass, S. Dilipkumar, Ajith Sundaram, and G. Saritha. "An efficient algorithm to classify the mitotic cell using ant colony algorithm." In 2022 International Conference on Computer, Power and Communications (ICCPC), pp. 512-517. IEEE, 2022.

[32]. King, Anthony. "The digital revolution: Camouflage in the twenty-first century." Millennium 42, no. 2 (2014): 397-424.

[33]. Justin Marshall, N. "Communication and camouflage with the same 'bright'colours in reef fishes." Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences 355, no. 1401 (2000): 1243-1248.

[34]. Behrens, Roy R. "The role of artists in ship camouflage during World War I." Leonardo 32, no. 1 (1999): 53-59.

[35]. Bagge, Laura E. "Not as clear as it may appear challenges associated with transparent camouflage in the ocean." Integrative and Comparative Biology 59, no. 6 (2019): 1653-1663.

[36]. Dixit, Varun, and Davinderjit Kaur. "Secure and Efficient Outsourced Computation in Cloud Computing Environments." *Journal of Software Engineering and Applications* 17, no. 9 (2024): 750-762.

[37]. Prasad, G. N. R., Lakshman Kumar Kanulla, Vivek Ijjagiri, and S. Suma Christal Mary. "Implementation and Health Monitoring System of Vehicle by using IoT and Cloud Computing." In *2022 6th International Conference on Electronics, Communication and Aerospace Technology*, pp. 518-521. IEEE, 2022.

[38]. Davuluri, Sandeep Kumar, Syed Ahad Murtaza Alvi, Manisha Aeri, Abhishek Agarwal, Mohammad Serajuddin, and Zafarul Hasan. "A Security Model for Perceptive 5G-Powered BC IoT Associated Deep Learning." In *2023 International Conference on Inventive Computation Technologies (ICICT)*, pp. 118-125. IEEE, 2023.

[39]. Al-Shourbaji, I., Kachare, P. H., Abualigah, L., Abdelhag, M. E., Elnaim, B., Anter, A. M., & Gandomi, A. H. (2022). A deep batch normalized convolution approach for improving COVID-19 detection from chest X-ray images. Pathogens, 12(1), 17.

[40]. Madhusudhan Dasari sreeramulu, "Analysis of Natural language processing for code generation by using COPRAS Method" REST Journal on Data Analytics and Artificial Intelligence 3(1), March 2024, 61-69.

[41]. Liu, Qidi, and Mable P. Fok. "Bio-inspired photonics–marine hatchetfish camouflage strategies for rf steganography." Optics express 29, no. 2 (2021): 2587-2596.

[42]. Dr. B. Amudha Dr. Rajesh Ramachandran, Dr. Nachiketa Rout, A. Sactivelan, Shanthini Kalpurniya, "Understanding Disability Prevalence and Distribution: Insights from a Community Survey inThiruporur Constituency, Tamil Nadu", International Journal of All Research Education and Scientific Methods (IJARESM), 12(3),2024, 1247-1258.

[43]. Ramachandran, Rajesh, and Anuragini Singh. "The Effect of Hindustani Classical Instrumental Music Santoor in improving writing skills of students with Learning Disability." *International Journal of Humanities and Social Science Invention* 3, no. 6 (2014): 55-60.

[44]. Jaffe, Jules S., Ben Laxton, and Sarah Zylinski. "The Sub Sea Holodeck: A 14-megapixel immersive virtual environment for studying cephalopod camouflage behavior." In OCEANS 2011 IEEE-Spain, pp. 1-6. IEEE, 2011.

[45]. Yu, Zhenchuan, and Peiyi Wu. "Underwater communication and optical camouflage ionogels." Advanced Materials 33, no. 24 (2021): 2008479.

[46]. Varun Dixit, "Optimizing Cost and Carbon Footprint With Smart Scaling Using SQS Queue Triggers: Part 1" 2024.

[47]. Davuluri, Sandeep Kumar, Deepak Srivastava, Manisha Aeri, Madhur Arora, Ismail Keshta, and Richard Rivera. "Support vector machine based multi-class classification for oriented instance selection." In 2023 International Conference on Inventive Computation Technologies (ICICT), pp. 112-117. IEEE, 2023.

[48]. Kanulla, Lakshman Kumar, G. Gokulkumari, M. Vamsi Krishna, and Santhosh Kumar Rajamani. "IoT Based Smart Medical Data Security System." In International Conference on Intelligent Computing and Networking, pp. 131-142.

Singapore: Springer Nature Singapore, 2023.

[49]. Dr. J. Vijayalakshmy. Dr. Nachiketa Rout Ms. Jeni Kamala Saro. K, Dr. Rajesh Ramachandran, Dr. B. Amutha, Ms. Molly Philip, "Comprehensive Assessment of Mortality and Associated Co-Morbidities among Persons with Multiple Disabilities: A Systematic Review" International Journal of Advance and Applied Research, 1(30),2024, 1-8.

[50]. Al-Shourbaji, I., & Duraibi, S. (2023). IWQP4Net: An Efficient Convolution Neural Network for Irrigation Water Quality Prediction. Water, 15(9), 1657.

[51]. Chidipothu, Vamsi Krishna, Lakshman kumar Kanulla, Chaitanya Kiran Pandey, Sandeep Kumar Davuluri, Mohit Tiwari, and Devesh Pratap Singh. "Design and Implementation of Block Chain with Cybersecurity Scheme for Fog Based Internet of Things." In *2023 6th International Conference on Contemporary Computing and Informatics (IC3I)*, vol. 6, pp. 1409-1415. IEEE, 2023.

[52]. Verma, Pradeep. "Sales of Medical Devices–SAP Supply Chain." *International Journal of Computer Trends and Technology* 70, no. 9 (2022): 6-12.

[53]. Claes, Julien M., and Jérôme Mallefet. "Early development of bioluminescence suggests camouflage by counter-illumination in the velvet belly lantern shark Etmopterus spinax (Squaloidea: Etmopteridae)." Journal of Fish Biology 73, no. 6 (2008): 1337-1350.

[54]. Holt, Amanda L., Alison M. Sweeney, Sönke Johnsen, and Daniel E. Morse. "A highly distributed Bragg stack with unique geometry provides effective camouflage for Loliginid squid eyes." Journal of the Royal Society Interface 8, no. 63 (2011): 1386-1399.

[55]. Shohet, A. J., R. J. Baddeley, J. C. Anderson, E. J. Kelman, and D. Osorio. "Cuttlefish responses to visual orientation of substrates, water flow and a model of motion camouflage." Journal of Experimental Biology 209, no. 23 (2006): 4717-4723.

[56]. Rosenthal, Eric I., Amanda L. Holt, and Alison M. Sweeney. "Three-dimensional midwater camouflage from a novel two-component photonic structure in hatchetfish skin." Journal of The Royal Society Interface 14, no. 130 (2017): 20161034.

[57]. Zylinski, S., D. Osorio, and A. J. Shohet. "Cuttlefish camouflage: context-dependent body pattern uses during motion." Proceedings of the Royal Society B: Biological Sciences 276, no. 1675 (2009): 3963-3969.

[58]. Madhusudhan Dasari sreeramulu, "Investigation of Data Protection in Cloud Environment", Computer Science, Engineering and Technology, 2(1), March 2024, 48-55.

[59]. Du, Xuemin, Huanqing Cui, Tiantian Xu, Chenyang Huang, Yunlong Wang, Qilong Zhao, Yangsheng Xu, and Xinyu Wu. "Reconfiguration, camouflage, and color-shifting for bioinspired adaptive hydrogel-based millirobots." Advanced Functional Materials 30, no. 10 (2020): 1909202.

Copyright@2023 REST Publisher