

Original Article

Design of Drone to Deliver First Aid Kit Delivery in Tragedy Circumstances

Ramanthan R¹, Chandrasekaran K², Harini P³, Harisvalan A⁴, Karmegam P⁵

^{1,2,3,4,5} Department. of Aeronautical Engineering, M.A.M. School of Engineering, Trichy, Tamilnadu, India.

Abstract: Drones, or unmanned aerial vehicles, have a lot to offer both the military and civilian emergency medical fields. The study's objective was to demonstrate the practical applications of these technologies in rescue operations and to offer global examples. Unmanned aerial vehicles can be used to transport goods on demand, provide blood in urban areas, save people who are in need, assess the extent of damages, keep an eye on crowds of people, conduct exploration activities, deliver blood samples and other analysis materials, offer automated external defibrillators, assist with air transportation and rescue operations, and carry out agricultural tasks. However, one must be aware of the current drone flight regulations, as the appearance of an unreported unmanned aircraft in controlled airspace has been found to have an impact on aviation safety globally. By deploying the kits from the air to land, the mechanism – which is attached to the drone – carries medical supplies safely and reduces the number of takeoffs and landings (using parachute method). This study's primary goal is to create a mechanism that can carefully carry and release a the medical kit in the intended area. The mechanism's ability to safely store and release medical first aid during takeoff and landing was demonstrated by the outcomes.

Keywords: Drone, Release Mechanism, Medical First Aids Kit.

INTRODUCTION

Drones, also known as unmanned aerial vehicles, or UAVs, are not a recent invention. Rather, they are the contemporary equivalent of the remotely flown target aircraft that was utilised in the 1920s and 1930s to rehearse firing of battleship guns. Since then, drones have advanced significantly and are now utilised for a variety of tasks, including surveillance, package delivery, and video shooting. Drones are also going to be life-saving equipment! The students have created a drone that can quickly transport a first aid kit to the accident scene. According to the Emergency Management Research Institute (EMRI), an ambulance's typical response time these days is 9.33 minutes instead of 13 minutes. Nevertheless, this is the average time, and timings can vary for a number of reasons. For instance, ambulance response times in rural and remote areas may be impacted by road conditions, whereas traffic jams in cities may cause delays.

In order to save lives during any medical emergency, prompt action is essential. Currently, though, the only means of getting medical supplies to areas in dire need are manned aircraft and wheeled cars. These methods can be expensive and slow, and they may not always be feasible if the emergency site is far away. Large cities also have a lot of traffic congestion, which makes it possible for ambulances to become stuck and miss the scheduled emergency response time. When professional medical personnel are not yet on the scene, victims of traffic accidents or health emergencies can receive immediate assistance thanks to the innovative use of drones. Potential risks can be avoided, potential deaths can be avoided, and patient treatment can be accelerated by quickening emergency response times. Unmanned aerial vehicles (UAVs) that are remotely or automatically controlled are commonly referred to as drones. These days, drones are revolutionising healthcare by delivering life-saving medical supplies and equipment, like medical first aid kits, telemedicine, or medical support like diagnostics, medications, instruments, blood, or life-saving. According to Hasanand Joffrey, drones are powered by lithium-ion batteries, which offer the highest power and energy density. According to SC Rosati, Croce, and Pinero, (2001) and Salameh and Kim (2009).

The drone batteries represent one of the most troublesome and potentially hazardous components of drone operations. The battery's power determines the drone's flight time and a more powerful battery keeps the drone in the air for a longer period. The flight time of normal drone ranges from 15minutes up to 60minutes. It



can also last between two to four hours if the batteries are of military grade quality. Thus, a notable drawback of drones is the high power consumption, which is dependent on the batteries that influence the flight duration of the drone's mission. With the current technology, the drone's battery lifespan is a limitation that can hinder medical aids delivery process. The drone's battery lifespan also usually depends on the usage of the drone itself. Corral, Fronza, El Ioini, and Ibershimi (2016) states that the manoeuvres, movements and general aspects of the flight profile(load, altitude, speed) that involve more energy investment will result in faster battery discharge that leads to shorter drone autonomy.

Therefore, it is important to optimize the flight time of drone by reducing the number of drone's take-off and landing since taking off and landing increase the flight time and consume more energy. Optimizing the batteries lifespan for the drones has then become the main motivation for us in conducting our study. This paper describes our study that concerns with the design of mechanism that prolongs drone's battery life and offers effective delivery of medical first aids. The mechanism developed is attached to the drone. It will carry the medical aids safely while decreasing number of take-off and landing by deploying the kits from air to land (using parachute method).

LITERATURE REVIEW

M. Dinesh Vijayanandh Raja, Karnataka Guru College of Technology: Unmanned Aerial Vehicles (UAV) are being proposed for critical applications such as obstacle detection, difficult navigation, and climate monitoring. Particularly in military applications, it marginalises the money and official lives that deviate from what the mother saw. military aircraft Serious problems in the local wooded area are poaching and human-animal cooperation. Issues can get ready to be tackled with the assistance of the entire reconnaissance. These days, timberland officials regulate the reconnaissance around the woodland. Examining the forest by officials is not a complete observation because errors may occur during the inspection due to common elements of the population. The seeing of the backwoods district is to be covered by UAV to avoid this problem.

Sreenatha G. Anavatti and Mahasneh UAVs, or unmanned aerial vehicles, are currently receiving a lot of attention due to their potential uses in a variety of industries. Compared to a quadcopter, a UAV can handle heavier payloads and is more resistant to malfunctions, but controlling one can also be difficult. This paper proposes a flexible Neural Organisations (NN) controller for stature adjustment and height following of a hexacopter UAV with questionable components. Examined are the regulator plan, life against impact-unsettling influences, and reenactment. Similarly, a typical Separated Corresponding Subsidiary Integrator (FPID) regulator for various control scenarios is compared to the regulator's execution.

Ali J. Askir and AlaaH. Muttar (Al-Iraqia University, Iraq) At that point, a great deal of effort and work had been completed and was available in the writing. The previous projects that are available can be summed up in the sections that follow. Helicopter: Increasing the payload mass of a helicopter modifies the framework's distinct response. The flight control framework of the aircraft should continue to maintain strength with modified manner elements and should also reject any inclination force brought on by a shifted mass focus. The framework will become unstable at whatever point an inspector determines it is impossible to handle if the regulator is unable to maintain stability with altered mass boundaries or is unable to ignore the aggravating forces of the progression due to additional force inclination from uneven stacking.

EXPERIMENTAL DETAILS

Drones are complex machines that have the potential to change various industries, from to police work. There are a lot of things happening within these small aerial devices. They must be light enough to fly whilst containing the various components that make them worth flying, such as remote control capabilities and cameras. These props pull the quadcopter through the air like a tractor. Most drone propellers are made of plastic and the better quality made of carbon fiber. You can also buy drone prop guards which you need especially if you are flying indoors or near people. This is also an area where we are seeing plenty of innovation. Better prop design will assist with giving a better flying experience and longer flight times. There is also some

big innovation towards low noise UAV props. Always good practice to inspect your props before flying and carry an extra set in case you notice some damage on a prop. Never fly with a damaged or bent prop.

RESULT AND DISCUSSIONS

The process of using computer technology for design and design-documentation is called computer-aided design (CAD), sometimes referred to as computer-aided design and drafting (CADD). The term "computer aided drafting" refers to using a computer to draft. The goal of CADD software, or environments, is to give users input-tools for designing, documenting, and manufacturing processes. The output from CADD is frequently electronic files that can be printed or used for machining. The creation of computer-aided design (CAD) software is closely linked to the processes it aims to streamline. Industry-based software, such as that used in manufacturing, construction, and other fields, usually operates in vector-based, linear environments, while graphic-based software works in raster-based, pixilated environments.

Solid Works is mechanical design automation software that takes advantage of the familiar Microsoft Windows graphical user interface. It is an easy-to-learn tool which makes it possible for mechanical designers to quickly sketch ideas, experiment with features and dimensions, and produce models and detailed drawings. A Solid Works model consists of parts, assemblies, and drawings. Typically, we begin with a sketch, create a base feature, and then add more features to the model

- We are free to refine our design by adding, changing, or reordering features.
- Associatively between parts, assemblies, and drawings assures that changes made to one view are automatically made to all other views.
- We can generate drawings or assemblies at any time in the design process.

CONCLUSION

Drone use in medicine has many benefits, including rapid assistance, cutting down on travel time to the patient, reducing complications in the injured due to shorter recovery times, assisting and enhancing the fundamental operations of medical emergency teams, and the ability to reach areas that are inaccessible for conventional medical transport (due to floods and blocked roads, for example). Nonetheless, it is crucial to be aware of the laws that are in place. There are a number of safety awareness campaigns available, but neither them nor the best laws can completely eliminate the risks associated with a drone being in an area it is not meant for. The appearance of an unreported unmanned aircraft in a controlled area is one problem that has been linked globally to aviation safety. Examples could include recording a large passenger aircraft from a close distance or stopping the approach to an international airport in response to a drone being detected.

REFERENCES

- [1] Act of 3 July 2002 Aviation Law, Journal of Laws 2002, no. 130, item 1112, with Amendments, 2002. [22] A. Konertand M. Kotlinski, "Polish regulations on unmanned ' aerial vehicles," Transportation Research Procedia, vol. 35, pp.140-147, 2018.
- [2] Act of 8 August 2016, Aviation Law, Journal of Laws 2016, no. 130, item 1317,withAmendments,2016.
- [3] Amukele,T.K.,Hernandez,J.andSnozekC.L.H.etal,,"Drone transport of chemistry and hematology samples over long distances," American Journal of Clinical Pathology, vol. 148, no. 5, pp. 427-435, 2017. [19] W. Glauser, "Blood-delivering drones saving lives in Africa and maybe soon in Canada," Canadian Medical Association Journal, vol. 190, no. 3, pp. E88-E89, 2018.
- [4] Amukele, T., Ness, P. M., Tobian, A. A., Boyd, J. and Street, J. "Drone transportation of blood products," Transfusion, vol. 57, no. 3, pp. 582-588, 2017.
- [5] Balasingam,M."Dronesinmedicine-theriseofthemachines,"International Journal of Clinical Practice, vol. 71, no. 9, Article ID e12989, 2017.
- [6] Divit Gupta, Anushree Srivastava "Investigating the Use of Artificial Intelligence in Talent Acquisition Procedures" IJARCCCE International Journal of Advanced Research in Computer and Communication Engineering, vol. 12, no.11, pp. 77-87, 2023/ Crossref <https://doi.org/10.17148/IJARCCCE.2023.121111>
- [7] George, J.G.; Marín-Esponda, T.T. & Kumar-Dandpat, P. (2019). Analyzing the impact of excess inventory of California Glam to control the inventories of distributors by integrating product and distributor segmentation concept in the supply chain. Trabajo de obtención de grado, Especialidad en Gestión de la Cadena de Suministro. Tlaquepaque, Jalisco: ITESO.

- [8] Ganesh, A. ., & Crnkovich, M., (2023). Artificial Intelligence in Healthcare: A Way towards Innovating Healthcare Devices. *Journal of Coastal Life Medicine*, 11(1), 1008-1023. Retrieved from <https://jclmm.com/index.php/journal/article/view/467> | Google Scholar
- [9] Palakurti, N. R., & Kolasani, S. (2024). AI-Driven Modeling: From Concept to Implementation. In *Practical Applications of Data Processing, Algorithms, and Modeling* (pp. 57-70). IGI Global.
- [10] Kushal Walia, 2024. "Scalable AI Models through Cloud Infrastructure" *ESP International Journal of Advancements in Computational Technology (ESP-IJACT)* Volume 2, Issue 2: 1-7. | Link
- [11] "Digital Signal Processing for Noise Suppression in Voice Signals", IJCSPUB - INTERNATIONAL JOURNAL OF CURRENT SCIENCE (www.IJCSPUB.org), ISSN:2250-1770, Vol.14, Issue 2, page no.72-80, April-2024, Available :<https://rjpn.org/IJCSPUB/papers/IJCSP24B1010.pdf>
- [12] Sridhar Selvaraj, 2024. "Futuristic SAP Fiori Dominance" *ESP International Journal of Advancements in Computational Technology (ESP-IJACT)* Volume 2, Issue 1: 32-37. | Google Scholar
- [13] Bhattacharya, S. (2024). Decentralized Identity Verification via Smart Contract Validation: Enhancing PKI Systems for Future Digital Trust. *International Journal of Global Innovations and Solutions (IJGIS)*. <https://doi.org/10.21428/e90189c8.93f690d2>
- [14] Pratiksha Agarwal, Arun Gupta, "Harnessing the Power of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) Systems for Sustainable Business Practices," *International Journal of Computer Trends and Technology*, vol. 72, no. 4, pp. 102-110, 2024. Crossref, <https://doi.org/10.14445/22312803/IJCTT-V72I4P113>
- [15] Venkata Sathya Kumar Koppiseti, "Automation of Triangulation, Inter-Company, or Intra-Company Procurement in SAP SCM," *International Journal of Computer Trends and Technology*, vol. 71, no. 9, pp. 7-14, 2023. Crossref, <https://doi.org/10.14445/22312803/IJCTT-V71I9P102>
- [16] Empowering Rules Engines: AI and ML Enhancements in BRMS for Agile Business Strategies. (2022). *International Journal of Sustainable Development through AI, ML and IoT*, 1(2), 1-20. <https://ijsdai.com/index.php/IJSDAI/article/view/36>
- [17] Pratiksha Agarwal, Arun Gupta, "Harnessing the Power of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) Systems for Sustainable Business Practices," *International Journal of Computer Trends and Technology*, vol. 72, no. 4, pp. 102-110, 2024. Crossref, <https://doi.org/10.14445/22312803/IJCTT-V72I4P113>
- [18] Shreyaskumar Patel "Enhancing Image Quality in Wireless Transmission through Compression and De-noising Filters" Published in *International Journal of Trend in Scientific Research and Development (ijtsrd)*, ISSN: 2456-6470, Volume-5 | Issue-3, April 2021, pp.1318-1323, URL: <https://www.ijtsrd.com/papers/ijtsrd41130.pdf>
- [19] Praveen Borra "A Survey of Google Cloud Platform (GCP): Features, Services, and Applications" ,*International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)* ,vol. 4, no. 3, pp. 191 - 199, 2024.
- [20] S. E. Vadakkethil Somanathan Pillai and K. Polimetla, "Mitigating DDoS Attacks using SDN-based Network Security Measures," 2024 *International Conference on Integrated Circuits and Communication Systems (ICICACS)*, Raichur, India, 2024, pp. 1-7, doi: 10.1109/ICICACS60521.2024.10498932.
- [21] Kuraku, Sivaraju and Kalla, Dinesh, Phishing Website URL's Detection Using NLP and Machine Learning Techniques (December 18, 2023). *Journal on Artificial Intelligence - Tech Science* , Available at SSRN: <https://ssrn.com/abstract=4666805>
- [22] Palakurti, N. R., & Kolasani, S. (2024). AI-Driven Modeling: From Concept to Implementation. In *Practical Applications of Data Processing, Algorithms, and Modeling* (pp. 57-70). IGI Global.
- [23] Sumanth Tatineni, Anirudh Mustyala, 2024. "Leveraging AI for Predictive Upkeep: Optimizing Operational Efficiency" *ESP International Journal of Advancements in Computational Technology (ESP-IJACT)* Volume 2, Issue 1: 66-79.
- [24] Arnab Dey, "Innovative Approach to Mitigate Man-in-the-Middle Attacks i Secure Communication Channels", *International Journal of Science and Research (IJSR)*, Volume 11 Issue 8, August 2022, pp. 1497-1500. <https://www.ijsr.net/getabstract.php?paperid=SR24320191712>
- [25] Dhamotharan Seenivasan, "ETL (Extract, Transform, Load) Best Practices," *International Journal of Computer Trends and Technology*, vol. 71, no. 1, pp. 40-44, 2023. Crossref, <https://doi.org/10.14445/22312803/IJCTT-V71I1P106>
- [26] Shreyaskumar Patel "Enhancing Image Quality in Wireless Transmission through Compression and De-noising Filters" Published in *International Journal of Trend in Scientific Research and Development (ijtsrd)*, ISSN: 2456-6470, Volume-5 | Issue-3, April 2021, pp.1318-1323, URL: <https://www.ijtsrd.com/papers/ijtsrd41130.pdf>
- [27] Panwar, V. (2024). Optimizing Big Data Processing in SQL Server through Advanced Utilization of Stored Procedures. *Journal Homepage*: <http://www.ijmra.us>, 14(02).
- [28] Dixit, A., Wazarkar, K. and Sabnis, A.S., 2021. Antimicrobial uv curable wood coatings based on citric acid. *Pigment & Resin Technology*, 50(6), pp.533-544.
- [29] Amit Mangal, 2023. *Revolutionizing Project Management with Generative AI*, *ESP Journal of Engineering & Technology Advancements* 3(4): 53-60. [Link]

- [30] Kuraku, Sivaraju and Kalla, Dinesh, Phishing Website URL's Detection Using NLP and Machine Learning Techniques (December 18, 2023). Journal on Artificial Intelligence - Tech Science , Available at SSRN: <https://ssrn.com/abstract=4666805>
- [31] Empowering Rules Engines: AI and ML Enhancements in BRMS for Agile Business Strategies. (2022). International Journal of Sustainable Development Through AI, ML and IoT, 1(2), 1-20. <https://ijsdai.com/index.php/IJSDAI/article/view/36>
- [32] Chanthati, Sasibhushan Rao. (2021). Second Version on A Centralized Approach to Reducing Burnouts in the IT industry Using Work Pattern Monitoring Using Artificial Intelligence using MongoDB Atlas and Python. 10.13140/RG.2.2.12232.74249.
- [33] Venkata Sathya Kumar Koppiseti, 2024. "Robotic Process Automation: Streamlining Operations in the Digital Era" *ESP International Journal of Advancements in Computational Technology (ESP-IJACT)* Volume 2, Issue 2: 74-81. [Link]
- [34] Dileep Kumar Pandiya, Nilesh Charankar. AI-Driven Intrusion Detection Systems for Microservices in B2B Sales Platforms. International Journal of Computer Engineering and Technology (IJCET), 14(1), 2023, 53-60.
- [35] P. S. Venkateswaran, F. T. M. Ayasrah, V. K. Nomula, P. Paramasivan, P. Anand, and K. Bogeshwaran, "Applications of Artificial Intelligence Tools in Higher Education," www.igi-global.com, 2024. <https://www.igi-global.com/chapter/applications-of-artificial-intelligence-tools-in-higher-education/335567>
- [36] Bogle, B. M., Rosamond, W. D., Snyder, K. T. and x Zegre Hemsey, K. T. "The case for drone assisted emergency response to cardiac arrest: an optimized statewide deployment approach," *North Carolina Medical Journal*, vol. 80, no. 4, pp. 204-212, 2019.
- [37] Chanthati, S. R. (2024). How the power of machine - machine learning, data science and NLP can be used to prevent spoofing and reduce financial risks. Sasibhushan Rao Chanthati. <https://doi.org/10.30574/gjeta.2024.20.2.0149>
- [38] Braun, J., Gertz, S. D. and Furer A. et al., "The promising future of drones in pre hospital medical care and its application to battlefield medicine," *Journal of Trauma and Acute Care Surgery*, vol. 87, no. 1S Suppl 1, pp. S28-S34, 2019.
- [39] Claesson, A., Svensson, L. and Nordberg P. et al., "Drones may be used to save lives in out of hospital cardiac arrest due to drowning," *Resuscitation*, vol. 114, pp. 152-156, 2017.
- [40] European Commission, Communication from the Commission to the European Parliament and the Council. A New Era for Aviation, European Commission, Brussels, Belgium, 2014.
- [41] S. E. VadakkethilSomanathanPillai and K. Polimetla, "Mitigating DDoS Attacks using SDN-based Network Security Measures," 2024 International Conference on Integrated Circuits and Communication Systems (ICICACS), Raichur, India, 2024, pp. 1-7, doi: 10.1109/ICICACS60521.2024.10498932.
- [42] Sachan, V., Malik, S., Gautam, R., & Kumar, P. (Eds.). (2024). *Advances in AI for Biomedical Instrumentation, Electronics and Computing: Proceedings of the 5th International Conference on Advances in AI for Biomedical Instrumentation, Electronics and Computing (ICABEC - 2023)*, 22-23 December 2023, India (1st ed.). CRC Press. <https://doi.org/10.1201/9781032644752>
- [43] S. E. V. S. Pillai and K. Polimetla, "Enhancing Network Privacy through Secure Multi-Party Computation in Cloud Environments," 2024 International Conference on Integrated Circuits and Communication Systems (ICICACS), Raichur, India, 2024, pp. 1-6, doi: 10.1109/ICICACS60521.2024.10498662.
- [44] Naga Ramesh Palakurti, 2023. "Evolving Drug Discovery: Artificial Intelligence and Machine Learning's Impact in Pharmaceutical Research" *ESP Journal of Engineering & Technology Advancements* 3(3): 136-147. [Link]
- [45] Naga Ramesh Palakurti, 2022. "AI Applications in Food Safety and Quality Control" *ESP Journal of Engineering & Technology Advancements* 2(3): 48-61. [Link]
- [46] Chanthati, S. R. (2024). An automated process in building organic branding opportunity, budget Intensity, recommendation in seasons with Google trends data. Sasibhushan Rao Chanthati. <https://doi.org/10.30574/wjaets.2024.12.2.0326>
- [47] Jacopo Pianigiani, Michal Styszynski, Atul S Moghe, Joseph Williams, Sahana Sekhar Palagrahara Chandrashekar, Tong Jiang, Rishabh Ramakant Tulsian, Manish Krishnan, Soumil Ramesh Kulkarni, Vinod Nair, Jeba Paulaiyan, Sukhdev S. Kapur, Ashok Ganesan, 2020. *Automation of Maintenance Mode Operations for Network Devices*, US10742501B1. [Link]
- [48] Kumar Shukla, Nimeshkumar Patel, Hirenkumar Mistry, 2024. "A COMPARATIVE STUDY OF INTERPRETABLE MACHINE LEARNING MODELS FOR ANALYZING HEALTHCARE DATA", *International Journal of Emerging Technologies and Innovative Research* (www.jetir.org), ISSN:2349-5162, Vol.11, Issue 4, page no.i45-i52, April-2024, Available : <http://www.jetir.org/papers/JETIR2404807.pdf>
- [49] Chandrakanth Lekkala 2022. "Integration of Real-Time Data Streaming Technologies in Hybrid Cloud Environments: Kafka, Spark, and Kubernetes", *European Journal of Advances in Engineering and Technology*, 2022, 9(10):38-43. [Link]
- [50] Patel, N. (2024, March). SECURE ACCESS SERVICE EDGE(SASE): "EVALUATING THE IMPACT OF CONVERGED NETWORK SECURITY ARCHITECTURES IN CLOUD COMPUTING." *Journal of Emerging Technologies and Innovative Research*. <https://www.jetir.org/papers/JETIR2403481.pdf>

- [51] Ayyalasoamayajula, Madan Mohan Tito, Sathishkumar Chintala, and Sandeep Reddy Narani. "Optimizing Textile Manufacturing With Neural Network Decision Support: An Ornstein-Uhlenbeck Reinforcement Learning Approach." *Journal of Namibian Studies: History Politics Culture* 35 (2023): 335-358.
- [52] Vishwanath Gojanur , Aparna Bhat, "Wireless Personal Health Monitoring System", *IJETCAS:International Journal of Emerging Technologies in Computational and Applied Sciences*,eISSN: 2279-0055,pISSN: 2279-0047, 2014. [Link]
- [53] Ayyalasoamayajula, Madan Mohan Tito, et al. "Proactive Scaling Strategies for Cost-Efficient Hyperparameter Optimization in Cloud-Based Machine Learning Models: A Comprehensive Review." *ESP Journal of Engineering & Technology Advancements (ESP JETA)* 1.2 (2021): 42-56.
- [54] Mistry, H., Shukla, K., & Patel, N. (2024). Transforming Incident Responses, Automating Security Measures, and Revolutionizing Defence Strategies through AI-Powered Cybersecurity. *Journal of Emerging Technologies and Innovative Research*, 11(3), 25. <https://www.jetir.org/>
- [55] Ayyalasoamayajula, M., & Chintala, S. (2020). Fast Parallelizable Cassava Plant Disease Detection using Ensemble Learning with Fine Tuned AmoebaNet and ResNeXt-101. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 11(3), 3013-3023.
- [56] Aparna Bhat, "Comparison of Clustering Algorithms and Clustering Protocols in Heterogeneous Wireless Sensor Networks: A Survey," 2014 INTERNATIONAL JOURNAL OF SCIENTIFIC PROGRESS AND RESEARCH (IJSPR)-ISSN : 2349-4689 Volume 04- NO.1, 2014. [Link]
- [57] Ayyalasoamayajula, Madan Mohan Tito, et al. "Implementing Convolutional Neural Networks for Automated Disease Diagnosis in Telemedicine." 2024 Third International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE). IEEE, 2024.
- [58] Shashikant Tank Kumar Mahendrabhai Shukla, Nimeshkumar Patel, Veeral Patel, 2024." AI BASED CYBER SECURITY DATA ANALYTIC DEVICE", 414425-001, [Link]
- [59] Ayyalasoamayajula, Madan Mohan Tito, Akshay Agarwal, and Shahnawaz Khan. "Reddit social media text analysis for depression prediction: using logistic regression with enhanced term frequency-inverse document frequency features." *International Journal of Electrical and Computer Engineering (IJECE)* 14.5 (2024): 5998-6005.
- [60] Aparna Bhat, Rajeshwari Hegde, "Comprehensive Study of Renewable Energy Resources and Present Scenario in India," 2015 IEEE International Conference on Engineering and Technology (ICETECH), Coimbatore, TN, India, 2015. [Link]
- [61] Ayyalasoamayajula, Madan Mohan Tito. "Innovative Water Quality Prediction For Efficient Management Using Ensemble Learning." *Educational Administration: Theory and Practice* 29.4 (2023): 2374-2381.
- [62] Sarangkumar Radadia Kumar Mahendrabhai Shukla ,Nimeshkumar Patel ,Hirenkumar Mistry,Keyur Dodiya 2024." CYBER SECURITY DETECTING AND ALERTING DEVICE", 412409-001, [Link]
- [63] Ayyalasoamayajula, Madan Mohan Tito, Srikrishna Ayyalasoamayajula, and Sailaja Ayyalasoamayajula. "Efficient Dental X-Ray Bone Loss Classification: Ensemble Learning With Fine-Tuned ViT-G/14 And Coatnet-7 For Detecting Localized Vs. Generalized Depleted Alveolar Bone." *Educational Administration: Theory and Practice* 28.02 (2022).
- [64] Aparna K Bhat, Rajeshwari Hegde, 2014. "Comprehensive Analysis Of Acoustic Echo Cancellation Algorithms On DSP Processor", *International Journal of Advance Computational Engineering and Networking (IJACEN)*, volume 2, Issue 9, pp.6-11. [Link]
- [65] Ayyalasoamayajula, M. M. T., Chintala, S., & Sailaja, A. (2019). A Cost-Effective Analysis of Machine Learning Workloads in Public Clouds: Is AutoML Always Worth Using? *International Journal of Computer Science Trends and Technology (IJCST)*, 7(5), 107-115.
- [66] Nimeshkumar Patel, 2022." QUANTUM CRYPTOGRAPHY IN HEALTHCARE INFORMATION SYSTEMS: ENHANCING SECURITY IN MEDICAL DATA STORAGE AND COMMUNICATION", *Journal of Emerging Technologies and Innovative Research*, volume 9, issue 8, pp.g193-g202. [Link]
- [67] Bhat, A., & Gojanur, V. (2015). Evolution Of 4g: A Study. *International Journal of Innovative Research in Computer Science & Engineering (IJIRCSE)*. Booth, K. (2020, December 4). How 5G is breaking new ground in the construction industry. *BDC Magazine*.<https://bdcmagazine.com/2020/12/how-5g-is-breaking-new-ground-in-the-constructionindustry/>. [Link]
- [68] Nimeshkumar Patel, 2021." SUSTAINABLE SMART CITIES: LEVERAGING IOT AND DATA ANALYTICS FOR ENERGY EFFICIENCY AND URBAN DEVELOPMENT", *Journal of Emerging Technologies and Innovative Research*, volume 8, Issue 3, pp.313-319. [Link]
- [69] Bhat, A., Gojanur, V., & Hegde, R. (2014). 5G evolution and need: A study. In *International conference on electrical, electronics, signals, communication and optimization (EESCO) – 2015*. [Link]
- [70] Chintala, S. ., & Ayyalasoamayajula, M. M. T. . (2019). OPTIMIZING PREDICTIVE ACCURACY WITH GRADIENT BOOSTED TREES IN FINANCIAL FORECASTING. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 10(3), 1710-1721. <https://doi.org/10.61841/turcomat.v10i3.14707>
- [71] A. Bhat, V. Gojanur, and R. Hegde. 2015. 4G protocol and architecture for BYOD over Cloud Computing. In *Communications and Signal Processing (ICCSPP)*, 2015 International Conference on. 0308-0313. Google Scholar. [Link]

- [72] M. Hindka, "Securing the Digital Backbone: An In-depth Insights into API Security Patterns and Practices", *Computer Science and Engineering*, Vol. 14, No. 2, pp. 35-41, 2024.
- [73] M. Hindka, "Design and Analysis of Cyber Security Capability Maturity Model", *International Research Journal of Modernization in Engineering Technology and Science*, Vol. 6, No. 3, pp. 1706-1710, 2024.
- [74] Hindka, M. (2024, June). Optimization Accuracy of Secured Cloud Systems Using Deep Learning Model. In 2023 4th International Conference on Intelligent Technologies (CONIT) (pp. 1-5). IEEE.
- [75] Ankitkumar Tejani, Vinay Toshniwal, 2023. "Differential Energy Consumption Patterns of HVAC Systems in Residential and Commercial Structures: A Comparative Study" *ESP International Journal of Advancements in Science & Technology (ESP-IJAST)* Volume 1, Issue 3: 47-58. [Link]
- [76] Ankitkumar Tejani, 2024. "AI-Driven Predictive Maintenance in HVAC Systems: Strategies for Improving Efficiency and Reducing System Downtime" *ESP International Journal of Advancements in Science & Technology (ESP-IJAST)* Volume 2, Issue 3: 6-19.[Link]
- [77] Vikramraj Kumar Thiyagarajan, 2024. "Financial Transformation: Redefining Consolidation Processes with Oracle FCCS", *International Journal of Innovative Research of science, Engineering and technology (IJIRSET)*, Volume 13, Issue 9, [Link]
- [78] Vedamurthy Gejjegondanahalli Yogeshappa, 2024. "AI-Driven Precision Medicine: Revolutionizing Personalized Treatment Plans", *International Journal of Computer Engineering and Technology (IJCET)*, 15(5), 2024, pp. 455-474. [Link]