Editorial

In recent years, the integration of technology into various aspects of our lives has brought about significant advancements and innovations across multiple fields. In this issue of the Journal of Engineering Research and Sciences, we present five papers that explore diverse applications of technology, ranging from disaster response to digital art, from peer-to-peer networks to healthcare services, and from chemical analysis to environmental sustainability. These papers offer valuable insights into the latest developments and challenges within their respective domains, showcasing the interdisciplinary nature of modern technological research.

Fast and accurate observation of an area in disaster scenarios such as earthquake, flood and avalanche is crucial for first aid teams." This paper delves into the utilization of Unmanned Aerial Vehicles (UAVs) equipped with digital surface models, orthomosaics, and object detection algorithms for real-time mapping and object identification in disaster-stricken areas. The study presents a monocular SLAM based system coupled with deep learning techniques to enhance efficiency and accuracy in emergency response scenarios [1].

The constant advancement in the area of machine learning has unified some areas that until then did not converge, such as computing with the arts in general." Focusing on the intersection of machine learning and digital art, this paper explores the evolution of neural networks in generating expressive and complex digital works of art. It raises intriguing questions about authenticity and authorship in the context of computer-generated art, while also presenting applied research on neural network techniques for artistic creation [2].

Centralized file-sharing networks have low reliability, scalability issues, and possess a single point of failure, thus making peer-to-peer (P2P) networks an attractive alternative." This paper conducts a comprehensive literature survey on emerging research areas of P2P networks, addressing issues such as security, privacy, trust management, and hybrid network models. It emphasizes the need for further research to tackle challenges in sensitive applications like healthcare services and vehicular communication networks [3].

Telemedicine is using telecommunications and IT tools to widen healthcare services to remote rural areas." Focusing on the utilization of ICT and satellite technology in telemedicine, this paper examines the challenges posed by long end-to-end latency in GEO satellite networks. It highlights the importance of optimizing TCP performance and minimizing latency to ensure effective real-time communication for remote healthcare services [4].

The work considered comparative analysis of CRI and TLI as green indicators versus some synthetic indicators in acid – base titration." This paper presents a comparative analysis of natural and synthetic indicators in acid-base titration, advocating for the use of green indicators like Curcuma longa rhizome extract and Tectona grandis leaves extract due to their effectiveness and environmental friendliness. It suggests future research directions for determining the properties and stability of these natural indicators [5].

Collectively, the papers featured in this issue offer valuable contributions to the advancement of technology across various domains. From disaster response and digital art to peer-to-peer networks, healthcare services, and chemical analysis, these studies showcase the diverse applications and challenges within the realm of advanced technologies and innovations. We hope that the insights presented in these papers will inspire further research and innovation in these fields, driving progress and societal impact.

References:

[1]   O. Eker, H. Cevikalp, H. Saribas, "Visual Slam-Based Mapping and Localization for Aerial Images," *Journal of Engineering Research and Sciences*, vol. 1, no. 1, pp. 1–9, 2022, doi:10.55708/js0101001.

[2]   R.A.V. Costa, F.L. Schiavoni, "Neural Networks and Digital Arts: Some Reflections," *Journal of Engineering Research and Sciences*, vol. 1, no. 1, pp. 10–18, 2022, doi:10.55708/js0101002.

[3]   F.O. Ehiagwina, N.A. Iromini, I.S. Olatinwo, K. Raheem, K. Mustapha, "A State-of-the-Art Survey of Peer-to-Peer Networks: Research Directions, Applications and Challenges," *Journal of Engineering Research and Sciences*, vol. 1, no. 1, pp. 19–38, 2022, doi:10.55708/js0101003.

[4]   O.S.A. Omuya, A.O. Tayo, "Analytical Framework to Minimize the Latency in Tele-herbal Healthcare Service," *Journal of Engineering Research and Sciences*, vol. 1, no. 1, pp. 39–50, 2022, doi:10.55708/js0101004.

[5]   K. Asemave, A.S. Shiebee, "Comparative Analysis of Curcuma longa Rhizome and Tectona grandis Leaves Extracts as Green Indicators versus some Synthetic Indictors in Acid-Base Titration," *Journal of Engineering Research and Sciences*, vol. 1, no. 1, pp. 51–55, 2022, doi:10.55708/js0101005.

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