Role of A.I in Surgery; a Letter to editor

Mohammed Ridha H .Alhakeem

Ministry of Oil, Midland Refineries company, Baghdad, Iraq

https://orcid.org/0000-0002-2429-5742

mu_1978@yahoo.com

Dear editor,

The use of artificial intelligence in surgery is expanding every day. In the past, there was a dearth of knowledge about the potential uses of robots in surgery, which was primarily based on the misconception that robots were taking the place of human surgeons while, in fact, their function was more like that of a supplement than a replacement [1-5]. A number of new directions in robotic and AI-enhanced surgery have emerged as a result of this attitude shift. Even if it took longer to examine its promising results, the steadily expanding research in this area has revolutionized how healthcare is provided over the past few years [6-10]. Robotic surgery is already very important since it has considerably decreased surgical problems brought on by trauma and has improved patient recovery, shortening hospital stays [11, 12]. AI has also shown some promise in terms of analyzing, storing, and analyzing patient records, and this has proven to be helpful in some cases. By transmitting the motions of the surgeon's hands to the surgical target through tremor-filtered movements of the surgical tools, conventional robots have complemented surgeons. The likelihood of a patient experiencing intraoperative trauma has considerably decreased as a result [13-15]. Further study in this area has shown encouraging results, including parts of machine learning like Learning from Demonstration and Reinforcement Learning that have opened up new possibilities for surgical robots to react to human activities [16]. This significant development is a result of recent developments in cloud computing, big data analytics, and artificial intelligence. Robots with AI assistance have already been employed in a number of surgical procedures [17,18,19]. In laparoscopic procedures, surgical robots that operate depending on the movement of the surgeon's head are helping. Similar to this, there are literary examples of robots that operate depending on facial, gaze, and gesture movements [20,21]. Robots with AI assistance have been employed in heart surgery, hair transplant procedures, and blood vessel suturing. By the end of the twenty-first century, clinically useful surgical robots are probably a reality [22, 23, 24],. Artificial intelligence and surgical robotics can be combined to expand surgical capabilities, improve patient access to care, and improve surgical results. We concur with the authors and anticipate that the use of AI in surgery will grow in the future [25-28].

REFERENCE

1. Zahmatkesh, S., Rezakhani, Y., Arabi, A., Hasan, M., Ahmad, Z., Wang, C., ... & Ghodrati, I. (2022). An approach to removing COD and BOD based on polycarbonate mixed matrix membranes that contain hydrous manganese oxide and silver nanoparticles: A novel application of artificial neural network based simulation in MATLAB. *Chemosphere*, *308*, 136304.
2. Tariq, S., Samad, A., Hamza, M., Ahmer, A., Muazzam, A., Ahmad, S., & Amhabj, A. M. A. (2022). Salmonella in Poultry; An Overview. *International Journal of Multidisciplinary Sciences and Arts*, *1*(1), 80-84.
3. Samad, A., Hamza, M., Muazzam, A., Ahmer, A., Tariq, S., Ahmad, S., & Mumtaz, M. T. (2022). Current Perspectives on the Strategic Future of the Poultry Industry After the COVID-19 Outbreak. *Brilliance: Research of Artificial Intelligence*, *2*(3), 90-96.
4. Samad, A., Hamza, M., Muazzam, A., & Harahap, M. K. (2022). Role of Artificial Intelligence in Livestock and Poultry Farming. Sinkron: jurnal dan penelitian teknik informatika, 7(4), 2425-2429.
5. Samad, A. (2022). Antibiotics Resistance in Poultry and its Solution. Devotion Journal of Community Service, 3(10), 999-1020.
6. Kumar, A., Singh, S., & Al-Bahrani, M. (2022). Enhancement in power conversion efficiency and stability of perovskite solar cell by reducing trap states using trichloroacetic acid additive in anti-solvent. *Surfaces and Interfaces*, *34*, 102341.
7. Kasasbeh, O. (2021). Public Debt and Economic Growth: Is There Any Causal Effect? An Empirical Analysis With Structural Breaks and Granger Causality for Jordan. *INTERNATIONAL JOURNAL OF TRENDS IN ACCOUNTING RESEARCH*, *2*(1), 106-110.
8. Kasasbeh, O. (2021). Fiscal Policy and its Relationship with Economic Growth a Review Study. *Available at SSRN 3789109*.
9. Ismael, S. H., Kareem, S. W., & Almukhtar, F. H. (2020). Medical Image Classification Using Different Machine Learning Algorithms. *AL-Rafidain Journal of Computer Sciences and Mathematics*, *14*(1), 135-147.

10. Galety, M., Al Mukthar, F. H., Maaroof, R. J., & Rofoo, F. (2021). Deep Neural Network Concepts for Classification using Convolutional Neural Network: A Systematic Review and Evaluation.

11. Galety, M. G., Al Mukthar, F. H., Maaroof, R. J., Rofoo, F., & Arun, S. (2022, April). Marking Attendance using Modern Face Recognition (FR): Deep Learning using the OpenCV Method. In *2022 8th International Conference on Smart Structures and Systems (ICSSS)* (pp. 1-6). IEEE.

12. Firas, A. M., & AL-Dabagh, M. Z. N. (2017). Real-Time Face Recognition System Using KPCA, LBP and Support Vector Machine. *International Journal of Advanced Engineering Research and Science*, *4*(2), 237062.

13. Balamurugan, R. J., AL-bonsrulah, H. A., Raja, V., Kumar, L., Kannan, S. D., Madasamy, S. K., ... & Al-Bahrani, M. (2022). Design and Multiperspectivity based performance investigations of H-Darrieus vertical Axis wind turbine through computational fluid dynamics adopted with moving reference frame approaches. *International Journal of Low-Carbon Technologies*.

14. Almukhtar, F., Mahmoodd, N., & Kareem, S. (2021). Search engine optimization: a review. *Applied Computer Science*, *17*(1).

15. Al-Mukhtar, F. H. (2003). Parallel Generation of non linear curves with computer aided application. *A these of doctor, Iraqi commission for computer and information*.

16. Alkasasbeha, O. M. A., Haron, N. F., & Abueid, A. I. S. (2018). The impact of government expenditures, taxes on economic growth in Jordan. *American based research journal*, *7*(12).

17. Alhayani, B. S., Hamid, N., Almukhtar, F. H., Alkawak, O. A., Mahajan, H. B., Kwekha-Rashid, A. S., ... & Alkhayyat, A. (2022). Optimized video internet of things using elliptic curve cryptography based encryption and decryption. *Computers and Electrical Engineering*, *101*, 108022.

18. Alhabib, M. H. M., Al-Dabagh, M. Z. N., AL-Mukhtar, F. H., & Hussein, H. I. (2019). Exploiting wavelet transform, principal component analysis, support vector machine, and k-nearest neighbors for partial face recognition. *Cihan University-Erbil Scientific Journal*, *3*(2), 80-84.

19. AL-Dabagh, M. Z., & AL-Mukhtar, F. H. (2017). Breast cancer diagnostic system based on MR images using KPCA-wavelet transform and support vector machine. *International Journal of Advanced Engineering Research and Science*, *4*(3), 237106.

20. Al-Dabagh, M. Z. N., Alhabib, M. M., & Al-Mukhtar, F. H. (2018). Face recognition system based on kernel discriminant analysis, k-nearest neighbor and support vector machine. *International Journal of Research and Engineering*, *5*(3), 335-338.

21. Al-Bahrani, M., Majdi, H. S., Abed, A. M., & Cree, A. (2022). An innovated method to monitor the health condition of the thermoelectric cooling system using nanocomposite-based CNTs. *International Journal of Energy Research*, *46*(6), 7519-7528.

22. Al-Bahrani, M., Gombos, Z. J., & Cree, A. (2018). The mechanical properties of functionalised MWCNT infused epoxy resin: A theoretical and experimental study. *Int. J. Mech. Mechatronics Eng*, *18*, 76-86.

23. Al-Bahrani, M., Bouaissi, A., & Cree, A. (2022). The fabrication and testing of a self-sensing MWCNT nanocomposite sensor for oil leak detection. *International Journal of Low-Carbon Technologies*, *17*, 622-629.

24. Al-Bahrani, M., & Cree, A. (2021). In situ detection of oil leakage by new self-sensing nanocomposite sensor containing MWCNTs. *Applied Nanoscience*, *11*(9), 2433-2445.

25. Al-Bahrani, M. (2019). *The Manufacture and Testing of Self-Sensing CNTs Nanocomposites for Damage Detecting Applications* (Doctoral dissertation, University of Plymouth).

26. Al-Abboodi, H., Fan, H., Mhmood, I. A., & Al-Bahrani, M. (2022). The dry sliding wear rate of a Fe-based amorphous coating prepared on mild steel by HVOF thermal spraying. *Journal of Materials Research and Technology*, *18*, 1682-1691.

27. Abueid, A. I. S., Haron, N. F., & Abad, O. M. (2018). The Impact of Foreign Direct Investment, Aids and Economic Growth: Evidence from Structural Breaks for Jordan. *International Journal of Academic Research in Business and Social Sciences*, *8*(11).

28. Abbas, E. F., Al-abady, A., Raja, V., AL-bonsrulah, H. A., & Al-Bahrani, M. (2022). Effect of air gap depth on Trombe wall system using computational fluid dynamics. *International Journal of Low-Carbon Technologies*, *17*, 941-949.