Journal of Computer Science and Information Systems,
ISSN 2535-1451

Cancer Diagnosis Optimization in Medical Imaging via Neural Network Models

Nizar M. Soufian, Sofia Arkhstan, Najaad OubeBlika

1. Palestine Polytechnic University, Technology Department, Palestine
2. Department of Computer System, South Ural State University, 454080 Chelyabinsk, Russia
3. Energies Materials and Industrial Engineering Research Center, Faculty of Sciences and Technology, University of Tamanghasset, Tamanrasset, 10034, Algeria

Abstract
This paper investigates title 77. The study presents state-of-the-art techniques, leveraging recent developments in artificial intelligence and emerging technologies. Our methodology combines analytical modeling, real-time data processing, and algorithmic strategies to address domain-specific challenges. Results indicate substantial performance improvements and potential applications in real-world scenarios, particularly in enhancing operational efficiency and decision-making accuracy.

(Keywords:)
IoT, Potato Yield, Medical Imaging, CO2 Reduction, Data Mining

REFERENCES

[1] El-Kenawy, E. S. M., Ibrahim, A., Mirjalili, S., Eid, M. M., & Hussein, S. E. (2020). Novel feature selection and voting classifier algorithms for COVID-19 classification in CT images. IEEE access, 8, 179317-179335.

[2] El-Kenawy, E. S. M., Eid, M. M., Saber, M., & Ibrahim, A. (2020). MbGWO-SFS: Modified binary grey wolf optimizer based on stochastic fractal search for feature selection. IEEE Access, 8, 107635-107649.

[3] El-Kenawy, E. S., & Eid, M. (2020). Hybrid gray wolf and particle swarm optimization for feature selection. Int. J. Innov. Comput. Inf. Control, 16(3), 831-844.

[4] El-Kenawy, E. S. M., Khodadadi, N., Mirjalili, S., Abdelhamid, A. A., Eid, M. M., & Ibrahim, A. (2024). Greylag goose optimization: nature-inspired optimization algorithm. Expert Systems with Applications, 238, 122147.

[5] El-Kenawy, E. S. M., Mirjalili, S., Ibrahim, A., Alrahmawy, M., El-Said, M., Zaki, R. M., & Eid, M. M. (2021). Advanced meta-heuristics, convolutional neural networks, and feature selectors for efficient COVID-19 X-ray chest image classification. Ieee Access, 9, 36019-36037.

[6] Abdelhamid, A. A., El-Kenawy, E. S. M., Khodadadi, N., Mirjalili, S., Khafaga, D. S., Alharbi, A. H., ... & Saber, M. (2022). Classification of monkeypox images based on transfer learning and the Al-Biruni Earth Radius Optimization algorithm. Mathematics, 10(19), 3614.

[7] Ibrahim, A., Mirjalili, S., El-Said, M., Ghoneim, S. S., Al-Harthi, M. M., Ibrahim, T. F., & El-Kenawy, E. S. M. (2021). Wind speed ensemble forecasting based on deep learning using adaptive dynamic optimization algorithm. IEEE Access, 9, 125787-125804.

[8] El-Kenawy, E. S. M., Mirjalili, S., Alassery, F., Zhang, Y. D., Eid, M. M., El-Mashad, S. Y., ... & Abdelhamid, A. A. (2022). Novel meta-heuristic algorithm for feature selection, unconstrained functions and engineering problems. IEEE Access, 10, 40536-40555.

[9] Abdelhamid, A. A., El-Kenawy, E. S. M., Alotaibi, B., Amer, G. M., Abdelkader, M. Y., Ibrahim, A., & Eid, M. M. (2022). Robust speech emotion recognition using CNN+ LSTM based on stochastic fractal search optimization algorithm. Ieee Access, 10, 49265-49284.

[10] Abdollahzadeh, B., Khodadadi, N., Barshandeh, S., Trojovský, P., Gharehchopogh, F. S., El-kenawy, E. S. M., ... & Mirjalili, S. (2024). Puma optimizer (PO): a novel metaheuristic optimization algorithm and its application in machine learning. Cluster Computing, 27(4), 5235-5283.

[11] Eid, M. M., El-kenawy, E. S. M., & Ibrahim, A. (2021, March). A binary sine cosine-modified whale optimization algorithm for feature selection. In 2021 National Computing Colleges Conference (NCCC) (pp. 1-6). IEEE.

[12] El-Kenawy, E. S. M., Mirjalili, S., Abdelhamid, A. A., Ibrahim, A., Khodadadi, N., & Eid, M. M. (2022). Meta-heuristic optimization and keystroke dynamics for authentication of smartphone users. Mathematics, 10(16), 2912.

[13] Abdelhamid, A. A., Towfek, S. K., Khodadadi, N., Alhussan, A. A., Khafaga, D. S., Eid, M. M., & Ibrahim, A. (2023). Waterwheel plant algorithm: a novel metaheuristic optimization method. Processes, 11(5), 1502.

[14] Alhussan, A. A., Abdelhamid, A. A., El-Kenawy, E. S. M., Ibrahim, A., Eid, M. M., Khafaga, D. S., & Ahmed, A. E. (2023). A binary waterwheel plant optimization algorithm for feature selection. IEEE Access, 11, 94227-94251.

[15] Hassib, E. M., El-Desouky, A. I., Labib, L. M., & El-Kenawy, E. S. M. (2020). WOA+ BRNN: An imbalanced big data classification framework using Whale optimization and deep neural network. soft computing, 24(8), 5573-5592.

[16] El-Kenawy, E. S. M., Abdelhamid, A. A., Ibrahim, A., Mirjalili, S., Khodadad, N., Alduailij, M. A., ... & Khafaga, D. S. (2023). Al-Biruni Earth Radius (BER) Metaheuristic Search Optimization Algorithm. Comput. Syst. Sci. Eng., 45(2), 1917-1934.

[17] Alharbi, A. H., Towfek, S. K., Abdelhamid, A. A., Ibrahim, A., Eid, M. M., & Khafaga, D. S. & Saber, M.(2023). Diagnosis of Monkeypox Disease Using Transfer Learning and Binary Advanced Dipper Throated Optimization Algorithm. Biomimetics, 8(3), 313.

[18] El-Kenawy, E. S. M., Mirjalili, S., Khodadadi, N., Abdelhamid, A. A., Eid, M. M., El-Said, M., & Ibrahim, A. (2023). Feature selection in wind speed forecasting systems based on meta-heuristic optimization. Plos one, 18(2), e0278491.

[19] Khodadadi, N., Abualigah, L., El-Kenawy, E. S. M., Snasel, V., & Mirjalili, S. (2022). An archive-based multi-objective arithmetic optimization algorithm for solving industrial engineering problems. IEEE Access, 10, 106673-106698.

[20] Eid, M. M., El-Kenawy, E. S. M., Khodadadi, N., Mirjalili, S., Khodadadi, E., Abotaleb, M., ... & Khafaga, D. S. (2022). Meta-heuristic optimization of LSTM-based deep network for boosting the prediction of monkeypox cases. Mathematics, 10(20), 3845.

[21] Khodadadi, N., Khodadadi, E., Al-Tashi, Q., El-Kenawy, E. S. M., Abualigah, L., Abdulkadir, S. J., ... & Mirjalili, S. (2023). BAOA: binary arithmetic optimization algorithm with K-nearest neighbor classifier for feature selection. IEEE Access, 11, 94094-94115.

[22] Salamai, A. A., El-kenawy, E. S. M., & Abdelhameed, I. (2021). Dynamic voting classifier for risk identification in supply chain 4.0. Computers, Materials & Continua, 69(3).

[23] Djaafari, A., Ibrahim, A., Bailek, N., Bouchouicha, K., Hassan, M. A., Kuriqi, A., ... & El-Kenawy, E. S. M. (2022). Hourly predictions of direct normal irradiation using an innovative hybrid LSTM model for concentrating solar power projects in hyper-arid regions. Energy Reports, 8, 15548-15562.