CURRICULUM VITAE

Mohammed Diykh, B.S., M.S.E., Ph.D.

Discipline of Biomedical Engineering

Iraq, Thi-Qar, Nasiriyah, University of Thi-Qar, Department of Computer Sceince,
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Google scholar: https://scholar.google.com/citations?user=B9EMHoEAAAAJ&hl=en

Biomedical and Brain modelling research

- Excellent publication record with a total of more than 15 peer-reviewed publications.
- Thorough experience in MATLAB software used for EEG and brain research.
- Advanced scientific research and analysis skills including data analysis using statistical approaches.
- Designing and developing a depth of anaesthesia assessment (DoA) for monitoring patient during surgery.
- Outstanding problem-solving skills
- Brain-computer interfaces, application of machine learning to analysis of neural data and computational modelling of large neural systems

Colleges and Universities Attended

2014-2018 PhD in Biomedical engineering and Computational Neuroscience, Department of Math and Computing, University of Southern Queensland Australia
Doctoral Thesis (Thesis by publication): "DEVELOPING NEW TECHNIQUES TO ANALYSE AND CLASSIFY EEG SIGNALS" (Thesis Supervisor: Dr. Shahab Abdulla and Dr. Khaled Saleh)

2008-2010 M.S.E. in Computer science, Department of software engineering, Voronezh state university, Russia

1998-2002 Undergraduate study in computer science, Department of Computer Science University of Thi-Qar, Iraq.

AWARDS AND ACHIEVEMENTS

- USQ Publication Excellence Awards for Journal Articles for 2017, semester 1.
- USQ Publication Excellence Awards for Journal Articles for 2017, semester 2.
- USQ Publication Excellence Awards for Journal Articles for 2020.

PROFESSIONAL EXPERIENCE

1. Lecturer appointment at Thi-Qar university 20/11/2011
2. Main areas of research are EEG signals analysis for developing expert systems to support neurologists.
3. Depth anaesthesia assessment research.
4. Successful publication track record, having completed a total of more than 20 publications of high impact.
5. journal articles that have been cited more than 500 times.
6. Supervising Higher Degree Research students.

Teaching Experience

2010-2011 Teaching Assistant for seminar Statistics and computer, University of ALmouthna, Iraq.

2011-2012 Teaching Assistant for seminar Image processing and computer graphic, University of Thi-Qar, Iraq.

2011-2012 Teaching Assistant for seminar operating systems and machine learning, University of Sadaq, Iraq

2012-2013 Teaching Assistant for seminar cryptography, University of Thi-Qar, Iraq.

2018-2019 Teaching computer graph, University of Thi-qar, Iraq.

2020-2021 Teaching, operating system, Master students, University of Thi-qar, Iraq.

SUPERVISION

I have supervised PhD research student and master stuent; details are given below:

- Hanan Al-Hadeeth, Qualification: PhD, Thesis title: Statistical approaches-based machine leaning algorithm for detecting abnormal event in EEG signals
- Hader, Qualification: Mater, Thesis title: Major depression Detection using FBSE and DA.
- Eman Alsafi, Qualification, Master, Thesis title: Monitoring the DoA based on HDE and Machnie learning algorithms.

PUBLICATIONS

1. Diykh, Mohammed, and Yan Li. "Complex networks approach for EEG signal sleep stages classification." Expert Systems with Applications 63 (2016): 241-248. Q1.
2. Diykh, Mohammed, Yan Li, and Peng Wen. "EEG sleep stages classification based on time domain features and structural graph similarity." IEEE Transactions on Neural Systems and Rehabilitation Engineering 24.11 (2016): 1159-1168. Q1.
3. Sahi, A., Lai, D., Li, Y. and Diykh, M., 2017. An Efficient DDoS TCP Flood Attack Detection and Prevention System in a Cloud Environment. IEEE Access. Q1.
4. Diykh, Mohammed, and Yan LI. "Fuzzy and non-fuzzy approach for digital images classification." Journal of Theoretical and Applied Information Technology 95.4 (2017).
5. Al-Salman, Wessam, Yan Li, Peng Wen, and Mohammed Diykh. "An efficient approach for EEG sleep spindles detection based on fractal dimension coupled with time frequency image." Biomedical Signal Processing and Control 41 (2018): 210-221.
6. Lafta, Raid, Ji Zhang, Xiaohui Tao, Yan Li, Mohammed Diykh, and Jerry Chun-Wei Lin. "A Structural Graph-Coupled Advanced Machine Learning Ensemble Model for Disease Risk Prediction in a Telehealthcare Environment." In Big Data in Engineering Applications, pp. 363-384. Springer, Singapore, 2018.
7. Diykh, Mohammed, et al. "Complex networks approach for depth of anesthesia assessment." Measurement 119 (2018): 178-189 Q1.
8. Abdulla, S., Diykh, M., Laft, R. L., Saleh, K., & Deo, R. C. (2019). Sleep EEG signal analysis based on correlation graph similarity coupled with an ensemble extreme machine learning algorithm. Expert Systems With Applications.Q1.
9. Diykh, M., Abdulla, S., Saleh, K., & Deo, R. C. (2019). Fractal dimension undirected correlation graph-based support vector machine model for identification of focal and non-focal electroencephalography signals. Biomedical Signal Processing and Control, 54, 101611.

10. Diykh, Mohammed, Yan Li, and Shahab Abdulla. "EEG Sleep Stages Identification Based on Weighted Undirected Complex Networks." Computer Methods and Programs in Biomedicine (2020): 105116.Q1.
11. Diykh, M., Miften, F.S., Abdulla, S., Saleh, K. and Green, J.H., 2019. Robust approach to depth of anaesthesia assessment based on hybrid transform and statistical features. IET Science, Measurement & Technology.
12. Al-Hadythi, HAbdulla, S., Diykh, M., & Deo, R. C. Novel adaptive boosting LS-SVM classification approach designed for time-series signal classifications for epileptic seizure diagnosis application, Expert system with application, 2020.Q1.
13. Diykh, M., Miften, F.S., Abdulla, S., Saleh, K. and Green, J.H., 2020, A Novel Automatic Hand Movements Classification Approach Based on Logarithmic Spectrogram Image Coupled an Adaptive Boosting k-means Using Electromyogram EMG signals, computer in biology and medicine. Q1.
14. Diykh, M., Miften, F.S., Abdulla, S., Epileptic Seizures Detection Based on Non-linear Characteristics Coupled with Machine Learning Techniques. In Frontiers in Clinical Drug Research - CNS and Neurological Disorders: Vol. 7, 2020.
15. Diykh, M., Miften, F.S., Abdullaf, S., Deo, R.C., Siuly, S., Green, J.H. and Oudahb, A.Y., 2022. Texture Analysis Based Graph Approach For Automatic Detection of Neonatal Seizure from Multi-Channel EEG Signals. Measurement, p.110731. Q1.
16. Abdulla, S., Diykh, M., Alkhafaji, S.K., Greena, J.H., Al-Hadeethi, H., Oudah, A.Y. and Marhoon, H.A., 2022. Determinant of Covariance Matrix Model Coupled with AdaBoost Classification Algorithm for EEG Seizure Detection. Diagnostics, 12(1), p.74.
17. Diykh, M., Abdulla, S., Oudah, A.Y., Marhoon, H.A. and Siuly, S., 2021, October. A Novel Alcoholic EEG Signals Classification Approach Based on AdaBoost k-means Coupled with Statistical Model. In International Conference on Health Information Science (pp. 82-92). Springer, Cham.
18. Al-Hadeethi, H., Abdulla, S., Diykh, M., Deo, R.C. and Green, J.H., 2020. Adaptive boost LS-SVM classification approach for time-series signal classification in epileptic seizure diagnosis applications. Expert Systems with Applications, 161, p.113676.Q1.
19. Abdulla, S., Diykh, M., AlKhafaji, S.K., Oudah, A.Y., Marhoon, H.A. and Azeez, R.A., 2022, October. An Intelligence Approach for Blood Pressure

Estimation from Photoplethysmography Signal. In International Conference on Health Information Science (pp. 54-63). Cham: Springer Nature Switzerland.

20. Morad, M., Oudah, A.Y., Diykh, M., Marhoon, H.A. and Taher, H.B., 2022, November. Fast Fourier Transform Coupled with Machine Learning Algorithm for K-Complexes Detection. In Proceedings of Third Doctoral Symposium on Computational Intelligence: DoSCI 2022 (pp. 307-313). Singapore: Springer Nature Singapore.
21. Mohammed, H. and Diykh, M., 2023. Improving EEG major depression disorder classification using FBSE coupled with domain adaptation method based machine learning algorithms. Biomedical Signal Processing and Control, 85, p.104923, Q1.
22. Al-Saadi, Y.R., Tapou, M.S., Badi, A.A., Abdulla, S. and Diykh, M., 2022. Developing Smart Self Orienting Solar Tracker for Mobile PV Power Generation Systems. IEEE Access, 10, pp.79090-79099, Q1.
23. Abdulla, S., Diykh, M., Siuly, S. and Ali, M., 2023. An intelligent model involving multi-channels spectrum patterns based features for automatic sleep stage classification. International Journal of Medical Informatics, 171, p.105001, Q1.
24. Diykh, M., Abdulla, S., Deo, R.C., Siuly, S. and Ali, M., 2023. Developing a novel hybrid method based on dispersion entropy and adaptive boosting algorithm for human activity recognition. Computer Methods and Programs in Biomedicine, 229, p.107305, Q1.

Reviewing Duty for Academic Journals

- Journal of expert systems with application
- Brain informatics, an international journal
- Neural Processing Letters
- Computer in biology and medicine.
- IEEE Transactions on Biomedical and health informatics
- IEEE Transactions on cybernetics
- IEEE transaction on instrumentation and measurement
- IEEE Access
- Sensory
- Entropy

- IEEE Transactions on Neural Systems and Rehabilitation Engineering
- Biomedical signal processing and control
- Entropy
- Complexity Journal
- Recent pattern on computer science
- Applied sciences
- Neural engineering journal
- Artificial Intelligence in Medicine
- Informatics in Medicine Unlocked.
- Journal of Ambient Intelligence and Humanized Computing.