

Prof. Dr. Alaa Muhammad Sagheer



Job Title:	- Professor of Artificial Intelligence - Member of the KFU Scientific Council
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Department :	Computer Science
Office Number :	CS-2228
Qualification:	PhD in Intelligent Systems, Kyushu University, JAPAN (2007)
Professional Association:	<ul style="list-style-type: none">• IEEE member, since 2003• IEEE Computer Society member, since 2003• IEEE Computational Intelligence Society member• IEEE Communications Society member• IEEE Green ICT Society member
Professional Certificates:	
Research Area:	Artificial Intelligence; Machine Learning; Agents and Robotics; Pattern Recognition; Computer Vision; Optimization; Quantum Computing
Research Projects:	<ol style="list-style-type: none">1- COE Research Grant (2004:2007) - Kyushu University, <u>JAPAN</u>. Budget: 26000 USD.2- Science and Technology Development Fund <u>STDF</u>, Ministry of Higher Education, (2010-2013), <u>EGYPT</u>. Budget: 124000 USD3- Project of Continuous Improvement and Qualifying for Accreditation <u>PCIQA</u>, Ministry of Higher Education, (2010-2012), <u>EGYPT</u>. Budget: 200000 USD.4- Small and Medium Enterprises (SME) Program, ITIDA, MCIT, (2012), <u>EGYPT</u>. "A partnership with Industry". Budget: 14000 USD

	<p>5- Deanship of Scientific Research (DSR), King Faisal University, (2016), Saudi Arabia. Budget: 16800 USD.</p> <p>6- Deanship of Scientific Research (DSR), King Faisal University, (2019-2020), Saudi Arabia. Budget: 16000 USD</p>
Projects Under Supervision:	
Courses Taught at KFU:	Artificial Intelligence; Foundations of Artificial Intelligence; Machine Learning; Applications of Artificial Intelligence; Algorithms Design and Analysis; Advanced Algorithms; Research Methodologies of Computer Science.
Publication:	<p style="text-align: right;">* <i>Corresponding Author</i></p> <p>A. Working Manuscripts</p> <p>1) Usman Ashraf, and Alaa Sagheer * "Blockchain and AI in Healthcare Medicine Post-COVID19: A Comprehensive Review," To submit shortly.</p> <p>2) Abdulmuti Salkini, and Alaa Sagheer * "Voice Assisted Smart Mirror with Face ID" To submit shortly.</p> <p>B. Publications in Refereed International Journals (Peer Reviewed)</p> <p>3) Alaa Sagheer *, H. Hamdoun, and H. Youness, "<i>Deep LSTM-Based Transfer Learning Approach for Coherent Forecasts in Hierarchical Time Series</i>", <i>Sensors</i>, 21(13), 4379, 2021. [Q1 – IF (3.6)]</p> <p>4) H. Hamdoun, Alaa Sagheer *, and H. Youness, "<i>Energy Time Series Forecasting-Analytical and empirical comparison of conventional and machine learning models</i>" <i>Journal of Intelligent & Fuzzy Systems</i>, 40(6), 12477-12502, 2021. [Q1 – IF (1.8)]</p> <p>5) Alaa Sagheer *, M. Mohammed, K. Riyad, M. Al-Hajhoj "A Cloud-based IoT Platform for Precision Control of Soilless Greenhouse Cultivation", <i>Sensors</i>, 21, 223, 2021. [Q1 – IF (3.6)]</p> <p>6) Nora Ahmad and Alaa Sagheer * "Online Learning of Hyperparameters in Deep Neural Networks for Financial Sentiment Analysis," <i>Int. J. of Intelligent Engineering and Systems</i>, 14(1), 2021. [Q2 – Scopus Indexed]</p> <p>7) Hussain Albaqshi and Alaa Sagheer * "Dysarthric Speech Recognition using Convolutional Recurrent Neural Networks," <i>Int. J. of Intelligent Engineering and Systems</i>, 13(6), Oct 2020. [Q2 – Scopus Indexed]</p> <p>8) Hala Hamdoun, and Alaa Sagheer * "Information Security through Controlled Quantum Teleportation Networks," <i>Digital Communication and Networks, Elsevier</i>, 6(4), 463-470, 2020. [Q1 – IF (6.8)]</p>

	<p>9) Eman Awny and <u>Alaa Sagheer</u> * " <i>Deep Learning-based Self Organizing Map for Content-based Image Retrieval Applications</i>" <i>Int. J. of Adv. Trends in Comp. Sci. and Eng</i>, 9 (4), 2020. [Scopus Indexed]</p> <p>10) Maha Shams and <u>Alaa Sagheer</u> * "A Natural Evolution Optimized based Deep Learning Algorithm for Neurological Disorder Classification" <i>Bio-Medical Materials and Engineering</i>, 31(2),73-94, <u>2020</u>. [Q2 – IF (1.3)]</p> <p>11) <u>Alaa Sagheer</u>* and Mostafa Kotb "Unsupervised Pre-training of a Deep LSTM-based Stacked Autoencoder for Multivariate Time Series Forecasting Problems," <i>Scientific Reports, Nature</i>, 9, 19038, 2019. Q1 – Impact Factor ISI (5.1) © Thomson Reuters Journal Citation Reports</p> <p>12) <u>Alaa Sagheer</u>, M. Zidan*, and M. Abdelsamea "A Novel Classification Perceptron Model for Pattern Classification Applications," <i>Entropy</i>, vol. 21, no. 763, 2019. Q2 – Impact Factor ISI (2.5) © Thomson Reuters Journal Citation Reports</p> <p>13) <u>Alaa Sagheer</u> * and Mostafa Kotb "Time Series Forecasting of Petroleum Production using Deep LSTM Recurrent Networks," <i>Neurocomputing</i>, vol. 323, pp: 203-213, 2019. Q1 – Impact Factor ISI (5.7) © Thomson Reuters Journal Citation Reports</p> <p>14) <u>Alaa Sagheer</u> "Multimodal Arabic Speech Recognition for Human-Robot Interaction Applications" <i>Journal of Applied Mathematics & Information Sciences</i>, vol. 9, no. 6, 2885-2897, 2015. Q4 – SJR (0.2) – Cite Score (0.65) @ Scopus</p> <p>15) <u>Alaa Sagheer</u> *, H. Hamdoun and N. Metwally "Teleportation with Multiple Accelerated Partners," <i>Communications in Theoretical Physics</i>, IOP Press, vol. 64, No. 3, 287–294, Sept. 2015. Q3 – Impact Factor ISI (1.9) © Thomson Reuters Journal Citation Reports</p> <p>16) <u>Alaa Sagheer</u> *, N. Tsuruta and R. Taniguchi, "P1DSOM- A Fast Search Algorithm for High-Dimensional Feature Space Problems," <i>International Journal on Pattern Recognition and Artificial Intelligence</i>, IJPRAI, vol. 28, issue 02, 2014. Q2 – Impact Factor ISI (1.5) © Thomson Reuters Journal Citation Reports</p> <p>17) <u>Alaa Sagheer</u> *, and H. Hamdoun, "Dynamics of Multi-Quibt States in Non-Inertial Frames for Quantum Communication Applications," <i>Quantum Information and Computation</i>, Rinton Press, vol. 14, no. 3&4, 0255–0264, 2014. Q2 – Impact Factor ISI (3.3) © Thomson Reuters Journal Citation Reports</p> <p>18) N. Metwally * and <u>Alaa Sagheer</u>, "Quantum Coding in Non-Inertial Frames," <i>Quantum Information Processing</i>, Springer, vol. 13, issue 3, 771-780, Mar.</p>
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2014.

Q2 – Impact Factor ISI (2.4) © Thomson Reuters Journal Citation Reports

- 19) S. Aly *, Alaa Sagheer, N. Tsuruta and R. Taniguchi, "Face recognition across illumination" Journal of **Artificial Life and Robotics**, Vol. 12, issues1-2, 33–37, Mar 2008.

Q3 –SJR (0.236) – Cite Score (0.73) @ Scopus

- 20) Alaa Sagheer *, N. Tsuruta, R. Taniguchi and S. Maeda, "Appearance Features Extraction vs. Image Transform for Visual Speech Recognition," International Journal of **Computational Intelligence and Applications**, IJCIA, Volume 6, no 1, 101-122, Imperial College Press ICP, Mar 2006.

Q3 –SJR (0.217) – Cite Score 0.83 @ Scopus

- 21) M. El-Kady *, M. Salim and Alaa Sagheer, "Numerical Treatment of Multiobjective Optimal Control Problems," **Automatica**, Elsevier, vol. 39, no. 1, 47–55, 2003.

Q1 – Impact Factor ISI (6.3) © Thomson Reuters Journal Citation Reports

C. Publications in Proceedings of International Conferences (Peer Reviewed)

- 22) Alaa Sagheer*, and S. Saad "Dominant Local Binary Pattern Considering Pattern Type for Facial Images Representation" Proceedings of the 18th International Conference on **Image Analysis and Processing** (ICIAP), Part II, LNCS 9280, 252–263, Italy, Sept 2015.
- 23) S. Saad, and Alaa Sagheer* "Difference-based Local Gradient Patterns for Image Representation" Proceedings of the 18th Inter Conf. on **Image Analysis and Processing** (ICIAP), Part II, LNCS 9280, 472–482, Italy, Sept 2015.
- 24) M. Zidan, Alaa Sagheer*, and N. Metwally, "An Autonomous Competitive Learning Algorithm using Quantum Hamming Neural Networks," Proceedings of the 2015 IEEE International Joint Conference on **Neural Networks** (IJCNN), 1-7, Ireland, July 2015.
- 25) S. Aly*, L. Hassan, Alaa Sagheer, "Partially Occluded Pedestrian Classification using Three stage Cascaded Classifier," The 9th IEEE International Conference on **Computer Engineering and Systems** (ICCES), Cairo, Dec 2014.
- 26) Alaa Sagheer* and S. Antar, "A Lip Reading Prototype for Handicapped Education," The 2014 International Conference on **Industry Academia Collaboration**, IAC, Cairo, Mar. 2014.
- 27) S. Antar and Alaa Sagheer*, S. Aly, and M. Tolba "AVAS: Speech Database for Multimodal Recognition Applications," Proceedings of the 13th International IEEE Conference on **Hybrid Intelligent Systems** (HIS), 123-128, Tunisia, 2013.
- 28) Alaa Sagheer*, S. Aly and S. Antar, "Bimodal Speech Recognition for Robot Applications," Proceedings of the 15th International Conference on **Man-Machine Interactions** (ICMMI). Series of "Advances in Intelligent Systems and Computing", vol. 242, Springer, 87-94, 2013.
- 29) S. Aly*, L. Hassan, Alaa Sagheer, and H. Murase, "Partially Occluded Pedestrian Classification using Part-based Classifiers and Restricted Boltzmann Machine

	<p><i>Model,</i>" The 16th International IEEE Annual Conference on Intelligent Transportation Systems, 2013.</p> <p>30) <u>Alaa Sagheer</u>* and H. Hamdoun, "Some Properties of Multi-Qubit Systems in Non-Inertial Frames," The IEEE Symposium Series on Computational Intelligence, 141–146, Singapore, Apr. 2013</p> <p>31) <u>Alaa Sagheer</u>* and S. Aly, "An Effective Face Detection Algorithm based on Skin Color Information," Proceedings of the 8th International Conference on Signal Image Technology & Internet based Systems, SITIS, Italy, Dec. 2012.</p> <p>32) <u>Alaa Sagheer</u>* and S. Aly, "Integration of Face Detection and User Identification with Visual Speech Recognition," Proceedings of the 19th International Conference on Neural Information Processing (ICONIP2012). In T. Huang et al. (Eds.): ICONIP 2012, Part V, LNCS 7667, 479-487, Springer, Heidelberg, Nov. 2012.</p> <p>33) <u>Alaa Sagheer</u> "Improved SOM Search Algorithm for High-Dimensional Data with Application to Face Recognition across Pose and Illumination," Proceedings of the 10th International Conference on Soft Computing and Pattern Recognition, SoCPaR, 247 – 252, France, Dec. 2010.</p> <p>34) <u>Alaa Sagheer</u> * and N. Metwally "Communication Via Quantum Neural Networks", Proc. of the 2nd World Congress on Nature and Biologically Inspired Computing, 418-422, Japan, Dec. 2010.</p> <p>35) <u>Alaa Sagheer</u>, "Piecewise One Dimensional Self Organizing Map for Fast Feature Extraction," Proceedings of the 10th International Conference on Intelligent Systems Design and Applications, ISDA, 633-638, Cairo, Egypt, 2010.</p> <p>36) S. Aly*, <u>Alaa Sagheer</u>, N. Tsuruta and R. Taniguchi, "Face recognition across illumination" the 12th Inter. Symposium on Artificial Life and Robotics, AROB, 802-805, Japan, 2007.</p> <p>37) <u>Alaa Sagheer</u>*, N. Tsuruta, R. Taniguchi, D. Arita and S. Maeda, "Fast Feature Extraction Approach for Multi-Dimension Feature Space Problems," Proceedings of the 18th International Conference on Pattern Recognition, ICPR, 417-420, Hong Kong, Aug. 2006.</p> <p>38) <u>Alaa Sagheer</u>*, N. Tsuruta, R. Taniguchi, and S. Maeda, "Fast Competition Approach using Self Organizing Map for Lip-Reading Applications," Proceedings of the 19th IEEE International Joint Conference on Neural Networks, IJCNN, 7166-7173, Canada, 2006.</p> <p>39) <u>Alaa Sagheer</u>*, N. Tsuruta, R. Taniguchi, and S. Maeda, "Hyper Column Model vs. Fast DCT for Feature Extraction in Visual Arabic Speech Recognition," the 5th IEEE Inter Symposium on Signal Processing and Information Technology, 761-766, Greece, Dec. 2005.</p> <p>40) <u>Alaa Sagheer</u>*, N. Tsuruta, R. Taniguchi and S. Maeda, "Visual Speech Features Representation for Automatic Lip-Reading," Proceedings of the 30th IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP, 781-784, USA, 2005.</p> <p>41) <u>Alaa Sagheer</u>*, N. Tsuruta, R. Taniguchi, and S. Maeda, "A Combination of Hyper Column Model with Hidden Markov Model for Japanese Lip-Reading</p>
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	<p><i>System</i>," Proceedings of the 4th International Symposium on Human and Artificial Intelligence Systems, HART, Japan, 2004.</p> <p>42) <u>Alaa Sagheer*</u>, N. Tsuruta, R. Taniguchi, S. Maeda, "Combination of Hypercolumn Neural Networks Model with Hidden Markov Model Based Lip-reading for Arabic Language," Proceedings of International Workshop on Fuzzy Systems and Innovational Computing, FIC, 231-235, Japan, Jun 2004.</p> <p>43) <u>Alaa Sagheer*</u>, N. Tsuruta and R. Taniguchi, "Arabic Lip-Reading System: A Combination of Hyper Column Neural Network Model with Hidden Markov Model," Proceedings of the 8th Inter. Conference on Artificial Intelligence and Soft Computing, 311-316, Spain, 2004.</p> <p>44) N. Tsuruta*, H. Iuchi, <u>Alaa Sagheer</u> and T. El.Tobely, "Self-Organizing Feature Maps for HMM Based Lip-reading," Proceedings of the 7th International Conference on Knowledge-Based Intelligent Information & Engineering Systems, KES, LNCS Springer, vol. 2774, part 2, 162-168, UK, Sept 2003.</p> <p>D. Publications in Domestic Journals (Not Peer Reviewed)</p> <p>45) S. Antar and <u>Alaa Sagheer*</u>, "Audio-Visual Arabic Speech (AVAS) Database for Human-Computer Interaction Applications," International Journal of Advanced Research in Computer Science and Software Engineering, IJARCSSE, vol. 3, issue 10, 84-90, 2013.</p> <p>46) M. El-Kady, M. Salim and <u>Alaa Sagheer*</u>, "Hybrid Penalty Partial Quadratic Interpolation Technique in The Constrained Optimization Problems," Journal Institute Mathematics & Computer Sciences (Computer Science series), vol. 9, no. 1, 7-18, 1998.</p> <p>E. Publications in Domestic Conferences/Meetings (Not Peer Reviewed)</p> <p>47) <u>Alaa Sagheer*</u>, Naoyuki Tsuruta, Rin-ichiro Taniguchi, and Sakashi Maeda, "On using the Self Organizing Map in Face Recognition," The IEICE Technical Report, Pattern Recognition and Media Understanding (PRMU2006-214), 47-52, Feb 2007, Japan.</p> <p>48) <u>Alaa Sagheer*</u>, Naoyuki Tsuruta, Rin-ichiro Taniguchi, Daisaku Arita, Sakashi Maeda, "Fast Learning Approach Using Self Organizing Map" The IEICE Technical Report, Pattern Recognition and Media Understanding (PRMU2005-206), 25-30, Feb 2006, Japan.</p> <p>49) <u>Alaa Sagheer*</u>, Naoyuki Tsuruta, Rin-ichiro Taniguchi, "Japanese Lip-Reading System," IEICE Technical Report Neurocomputing (NC2004-113), 31-36, Dec. 2004, Japan.</p> <p>50) <u>Alaa Sagheer*</u> and M. El-Kady, "Hybrid Penalty Partial Quadratic Interpolation Technique to solve Constrained Optimization Problems," Proceedings the 1st National Conference of Basic Science, 119-125, Assuit University, Assuit, Egypt, 1996.</p>
<p>Personal Homepage:</p>	<p>https://scholar.google.com/citations?user=wHdVI8MAAAAJ&hl=en https://www.researchgate.net/profile/Alaa_Sagheer</p>

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