

Curriculum Vitae

Dr. Eng. Ashraf Khaled Helmy

Professor of computers and systems, Head of Data Reception analysis and Receiving Station Affairs Division, National Authority of Remote Sensing and Space Sciences, Cairo, Egypt, 1993 to present, Email: akhelmy@narss.sci.eg, Phone: 0020-122-3755015.

(a) Professional Preparation

- Professor of computers and systems since Nov., 2016.
- Associate professor of computers and system, March., 2011.
- Ph.D. in Information Technology, Faculty of Computers and Information, Cairo university, 2005, entitled, “Developing 3D Model from Interferometric SAR Images”.
- Master’s degree in electronic and communication Engineering, Faculty of Engineering, Cairo University, 2000. “Artificial Neural Network Techniques for Detecting Change in satellite Images”.
- B.Sc. Degree in Electronic and Communication Engineering, Zagazig University, 1991.

(b) Appointments

- ❖ Head of Data Reception analysis and Receiving Station Affairs Division (2020-current).
- ❖ Head of Space Sciences and strategic studies Division (2010-2020)
- ❖ Head of Digital Image Processing Department, NARSS, (2005-2010)
- ❖ Invited professor, Department of Computer Science, Faculty of Computers and Informatics, Suez Canal University, Ismailia, Egypt, 2005 to 2012.
- ❖ Invited professor, Faculty of Information Technology, Misr University for Science and Technology (must), Cairo, Egypt, 2009 to 2011.
- ❖ Invited professor, Department of computers, Faculty of Engineering, Suez Canal University, and Ismailia, Egypt, 2005-2010.
- ❖ A regular reviewer for applying soft computing journal.
- ❖ Associate editor of Egyptian Journal of Remote Sensing and space sciences.

(c) Publications

1. Mohamed AboElenean, [Ashraf Helmy](#), Fawzy ElTohamy, and Ahmed Azouz "Land cover analysis of PolSAR images using probabilistic voting ensemble and integrated support vector machine," *Journal of Applied Remote Sensing* 17(4), 044505 (20 October 2023). <https://doi.org/10.1117/1.JRS.17.044505>
2. ELBohy, A. Azouz, A. S. Mashaly and [A. K. Helmy](#), "Evaluating the Effect of Stage Removal on the Performance of Phase Gradient Autofocus (PGA) Algorithm," *2023 International Telecommunications Conference (ITC-Egypt)*, Alexandria, Egypt, 2023, pp. 754-760, doi: 10.1109/ITC-Egypt58155.2023.10206094.
3. Rewhel, Ekram M, [a.k.helmy.](#), et al. "Deep Learning Methods Used in Remote Sensing Images: A Review." *Journal of Environmental & Earth Sciences* 5.1 (2023): 33-64.
4. M. A. Elenean, A. T. Hafez, [A. K. Helmy](#), F. ElTohamy and A. Azouz, "Unsupervised Multi-level Segmentation Framework for PolSAR Data using H-Alpha features and the Combined Edge- Region based segmentation," *2023 IEEE Aerospace Conference*, Big Sky, MT, USA, 2023, pp. 1-8, doi: 10.1109/AERO55745.2023.10115863.
5. Sayed A. Mohamed, Amira S. Mahmoud, Marwa S. Moustafa, [Ashraf K. Helmy](#) and Ayman H. Nasr, "Building Footprint Extraction in Dense Area from LiDAR Data using Mask R-CNN" *International Journal of Advanced Computer Science and Applications (IJACSA)*, 13(6), 2022. <http://dx.doi.org/10.14569/IJACSA.2022.0130643>
6. Sayed A. Mohamed, Ayman H. Nasr, [Ashraf. K. Helmy.](#), "Surface Monitoring by Coherent Change Detection of Time Series (CCDTS) Using Interferometric SAR Sentinel-1 Data" *Graphics, Vision and Image Processing Journal*, ISSN 1687-398X, Volume 20, Issue 1, ICGST LLC, Delaware, USA, Dec. (2020)
7. Sayed, H.M., Taie, S.A., El-Khoribi, R.A., Abdelrahman, I.F., [Helmy, A.K.](#), "Point clouds reduction model based on 3D feature extraction (2019) *International Journal of Embedded Systems*, 11 (1), pp. 78-83. DOI: 10.1504/IJES.2019.097573
8. Sayed, A., El-Sherbeny, A. S., Nasr, A. H., & [Helmy, A. K.](#) (2017). A new image super-resolution restoration algorithm. *International Journal of Computer Application*, 173(10), 5-12.
9. Moustafa, M.S., Ebied, H.M., [Helmy, A.K.](#), Nazamy, T.M., Tolba, M.F., "Acceleration of super-resolution for multispectral images using self-example learning and sparse representation (2017) *Computers and Electrical Engineering*, 62, pp. 249-265. DOI: 10.1016/j.compeleceng.2017.02.012

10. Moustafa, M., Ebeid, H.M., [Helmy, A.K.](#), Nazamy, T.M., Tolba, M.F. Parallel implementation of super-resolution-based neighbor embedding using GPU, (2017) *Advances in Intelligent Systems and Computing*, 533, pp. 628-638. DOI: 10.1007/978-3-319-48308-5_60
11. Moustafa, M., Ebeid, H.M., [Helmy, A.k.](#), Nazmy, T.M., Tolba, M.F., Rapid real-time generation of super-resolution hyperspectral images through compressive sensing and GPU, (2016) *International Journal of Remote Sensing*, 37 (18), pp. 4201-4224. DOI: 10.1080/01431161.2016.1209314
12. [Helmy, A.K.](#), El-Taweel, G.S., Image segmentation scheme based on SOM-PCNN in frequency domain, (2016) *Applied Soft Computing Journal*, 40, pp. 405-415. DOI: 10.1016/j.asoc.2015.11.042
13. Moustafa, M., Ebeid, H.M., [Helmy, A.k.](#), Nazamy, T.M., Tolba, M.F. Super-resolution: Sparse dictionary design method using quantitative comparison (2016) *2015 IEEE 7th International Conference on Intelligent Computing and Information Systems, ICICIS 2015*, art. no. 7397249, pp. 383-389. DOI: 10.1109/IntelCIS.2015.7397249
14. Moustafa, M., Ebied, H.M., [Helmy, A.k.](#), Nazamy, T.M., Tolba, M.F. Optimization methods for medical image super resolution reconstruction (2016) *Intelligent Systems Reference Library*, 96, pp. 135-157. DOI: 10.1007/978-3-319-21212-8_6
15. [Helmy, A.K.](#), El-Tawel, G.S. An integrated scheme to improve pan-sharpening visual quality of satellite images, (2015) *Egyptian Informatics Journal*, 16 (1), pp. 121-131. DOI: 10.1016/j.eij.2015.02.003
16. Moustafa, M., Ebied, H.M., [Helmy, A.k.](#), Nazamy, T.M., Tolba, M.F. Parallel super-resolution reconstruction based on neighbor embedding technique (2015) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 9156, pp. 134-143. DOI: 10.1007/978-3-319-21407-8_10
17. El-Tawel, G.S., [Helmy, A.K.](#) An edge detection scheme based on least squares support vector machine in a contourlet HMT domain (2015) *Applied Soft Computing Journal*, 26, pp. 418-427. DOI: 10.1016/j.asoc.2014.10.025
18. Moustafa, M., Ebied, H.M., [Helmy, A.k.](#), Nazamy, T.M., Tolba, M.F. Satellite super resolution image reconstruction based on parallel support vector regression (2014) *Communications in Computer and Information Science*, 488, pp. 223-235.
19. Nasr, A.H., El-Tawel, G.S., [Helmy, A.K.](#) Super resolution for Egyptsat-1 images with erratic shift (2014) *Journal of Computer Science*, 10 (8), pp. 1324-1335. DOI: 10.3844/jcssp.2014.1324.1335
20. S.A. Mohamed , [A.K. Helmy](#), M.A. Fkirin and S.M. Badway ,“ Proposed Method to Measure Sub Pixel Shift in Egyptsat-1 Aliased Images”, *International Journal of Computer Applications (0975 – 8887)* Volume 95– No. 10, June 2014.

21. S.A. Mohamed, [A.K. Helmy](#), M.A. Fkirin and S.M. Badway ,
 “Accuracy Analysis of Phase Correlation Shift Measurement Methods Applied to EGYPTSAT-1 Satellite”, In proceeding of: Radio Science Conference (NRSC), 2013 30th National, DOI: 10.1109/NRSC.2013.6587933.
22. Moustafa, M., Ebied, H.M., [Helmy, A. K.](#), Analysis of shift estimation techniques of super resolution applied to satellite images (2013) Proceedings - 2013 8th International Conference on Computer Engineering and Systems, ICCES 2013, art. no. 6707210, pp. 233-238. DOI: 10.1109/ICCES.2013.6707210
23. [Helmy, A.K.](#), El-Taweel, Gh.S. Regular gridding and segmentation for microarray images (2013) Computers and Electrical Engineering, 39 (7), pp. 2173-2182. DOI: 10.1016/j.compeleceng.2013.07.022
24. El-Taweel, G.S., [Helmy, A.K.](#) Image fusion scheme based on modified dual pulse coupled neural network (2013) IET Image Processing, 7 (5), pp. 407-414. DOI: 10.1049/iet-ipr.2013.0045
25. Nasr, A.H., [Helmy, A.K.](#) EGYPTSAT-1 super-resolution image reconstruction using data fusion (2011) 2011 Joint Urban Remote Sensing Event, JURSE 2011 - Proceedings, art. no. 5764783, pp. 317-320. DOI: 10.1109/JURSE.2011.5764783
26. [Helmy, A.K.](#), El-Taweel, G.S. Speckle suppression of radar images using normalized convolution (2010) Journal of Computer Science, 6 (10), pp. 1154-1158. DOI: 10.3844/jcssp.2010.1154.1158
27. [A.K. Helmy](#) and Gh.S. El-Taweel, "Neural Network Change Detection Model for Satellite Images Using Textural and Spectral Characteristics ", American J. of Engineering and Applied Sciences (AJEAS), Vol.3, Issue 4, pp. 604-610, 2010 ISSN: 1941-7020© Science Publications.
28. [Ashraf. K. Helmy](#) ,Ayman Nasr and G.S.El-Taweel, " Assessment and Evaluation of Different Data Fusion Techniques", International Journal of Computer (IJC), Vol. 4, Issue 4,2010, ISSN: 1998-4308.
29. G.S.El-Taweel and [Ashraf. K. Helmy](#), "Interferogram Filtering Using Gaussians Scale Mixtures", International Journal of Image Processing Vol.4, Issue 4, 2010, ISSN: 1985-2304
30. Nasr, A.H., [Helmy, A.K.](#), Mohamed, S.A. Exploration of MIRSAT-1 data in different change detection applications (2009) Proceedings of the 5th WSEAS International Conference on Remote Sensing, REMOTE '09, pp. 39-46.
31. [Ashraf. K. Helmy](#) and GH.S.El-Taweel, "Authentication Scheme Based on Principal Component Analysis for Satellite Images" International Journal of Signal Processing, Image Processing and Pattern Recognition, Vol. 2, No.3, September 2009, ISSN: 2005-4270.
32. A. H. Nasr, and [A. K. Helmy](#) "Integration of MIRSAT-1 and SPOT-2 Data for Quantitative Change Detection Applications", ICGST-GVIP Journal, Vol. 9, No. v, 2009, , ISSN: 1687-3998.

33. El-Taweel, G.S., [Helmy, A.K.](#) Efficient iris recognition scheme based on difference of filters (2008) WSEAS Transactions on Computer Research, 3 (3), pp. 152-161.
34. G.S.El-Taweel and [A.K.Helmy](#) ," Supervised Classification Using Gabor Wavelets and Neural Network For Lidar Data" Ain Shams Journal of Civil Engineering , Vol. 2 ,2008. ISSN: 2090-4479.
35. A. H. Nasr, B. M. El Leithy, and [A. K. Helmy](#) "Assessment of Some Water Quality Parameters Using MODIS Data along the Red Sea Coast, Egypt," ICGST-GVIP Journal, Vol. 7, No. 3, 2007. ISSN: 1687-3998
36. [A.k.Helmy](#), et al., "Dual Tree Complex Wavelet Transform for Adaptive Interferogram Residual Reduction", International Journal of Computer Vision, Graphic and Image Processing, vol. 4, ISSN 1687-398X, May 2005.
37. [A.k.Helmy](#), et al., "Fading Effect Reduction in Synthetic Aperture Radar Imagery Using Redundant Discrete Wavelet Transform", "Ain Shams university, Engineering Bulletin vol. 39, No.2, pp.575-589, 2004.
38. M.N. Hehazy, B. El-Leithy, [A.k. Helmy](#) and M. Kafatos "GIS Modeling of Best Sites for Agricultural Development in South Eastern Desert of EGYPT" AGRO-ENVIRON 2002.
39. [A.k.Helmy](#), et al "Artificial Neural Network Technique for Detecting Changes in Satellite Images", "Ain Shams university, Engineering Bulletin vol.34, No.4, pp.471-484, Dec. 1999

(d) Synergistic Activities

- AI, ML and Deep learning development in object Detection and tracking for different scopes including, car detection, Shoreline designation from Satellite Images, Oil spill detection from Satellite Images, crop monitoring from satellite images ...
- Neural Network (NN) development and modeling in change detection and Classifying Remotely Sensed Data.
- Invited professor, Faculty of Information Technology, Misr University for Science and Technology (must), Cairo, Egypt, 2009 to 2011.
- Invited professor, Department of computers, Faculty of Engineering, Suez Canal University, and Ismailia, Egypt, 2005-2010.
- Measuring Land Subsidence from Radar Interferometric Data.
- Development of Digital Elevation Model from RADAR IMAGING (Stereoscopic and Interferometric SAR Imaging)
- Developing a 3-D model using LIDAR Data.
- EGYPTSAT-1 Satellite on Orbit Modulation Transfer Function (MTF) Measurement.
- European Commission Joint Research Project for Monitoring and Modeling of Coastal Lagoons: Making Management Tools for Aquatic Resources in North Africa (MELMARINA).
- Modeling and Mapping of Shoreline Sensitivity for Tourism Development Using Satellite Data “Marsa-Alam Baranies Area, Red Sea Coast”
- Dune Fields of the Western Desert of Egypt, Using Landsat TM data, Arab League Education, Culture and Science Organization (ALECSO).
- Regional Earth Observation Application for Mediterranean Sea Emergency Surveillance (RAMSES) Project, in Co-operation with ESA/ESRIN (I), SPOT image (F), Eurimage (I), MS & I (F), ACS (I), ICOD (M) and others.
- UNDP-UNESCO Joint Project for the Capacity Building of the Egyptian Geological Survey & Mining Authority and the National Authority for Remote Sensing and Space Sciences (NARSS) for the Sustainable Development of the South Valley and Sinai using.