Saleh K. H. Aly

CONTACT INFORMATION

- **Address:** Majmaah University, Faculty of computer and information science, Computer Engineering Department, Majmaah, KSA
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- **Google scholar**: https://scholar.google.com.eg/citations?user=gBiXj-EAAAAJ&hl=en

EDUCATION

- **Ph.D. Computer Science and Engineering**, Kyushu University, Japan, Jan. 2010.

  Ph.D. Dissertation**: "**Pose and Illumination invariant Face Recognition using self-organizing maps". **Advisor:** Prof. Rin-ichiro Taniguchi
- **Research Student**, Kyushu University, Japan, Oct. 2005 ~ Sep. 2006
- **M.Sc. Computer Science and Engineering,** Assuit University, Aug. 2004.

  Master thesis: "An Incremental Learning Algorithm for Function Approximation".
- **B.Sc. Electrical Engineering (Computer Engineering Major)**, Assuit University, Egypt, June 1997. Accumulative average grade: Very Good with honor degree.

WORKING HISTORY

- **Associate Professor**: Jan 2016– present, Computer. Eng. Department, Faculty of Computer and Information science, Majmaah University, Majmaah, KSA
- **Associate Professor**: June 2015– present, Elect. Eng. Department, Faculty of Engineering, Aswan University, Aswan, Egypt
- **Visiting Researcher**: March 2014 – September 2014 at Tsukuba University, Computer vision Laboratory, Japan.
- **Visiting Researcher**: Jan 2013 – July 2013 at Nagoya University, Media Laboratory, Japan.

- **Assistant Professor**: 2010 – 2015, Elect. Eng. Department, Faculty of Engineering, Aswan University, Aswan, Egypt
- **Assistant lecturer**: 2004 – 2010, Elect. Eng. Department, Faculty of Engineering, South Valley University, Aswan, Egypt
- **Teaching Assistant:** 1998 – 2004, Elect. Eng. Department, Faculty of Engineering, South Valley University, Aswan, Egypt

Management & Administration Activities

- **Head of Electrical Engineering department**, Faculty of Engineering, Aswan University, from Nov. 2015 till now
- **Team Leader** for the developing and accrediting of Computer Engineering Program in the faculty of Engineering, Aswan University.
- **Manager** of IT unit in the Faculty of Engineering, Aswan University, 2014-2015
- **Supervise and manage** computer and network labs in the faculty of Engineering, Aswan University.
- **Member** in the project of developing and accrediting power Engineering Academic program in the period from 1/3/2010 till 30/9/2011
- **Member** of the electrical engineering department council in the academic year 2012/2013
- **Member** in the library and laboratory developing committee in the faculty of Engineering
- **Member** in the engineering consultant office of the faculty of Engineering
- **Head** of many purchasing committee for writing the specification of PCs, Network devices, laboratory equipments.

Academic Training Courses

During my stay in the faculty of Engineering, Aswan University, I obtained the follwing training courses:

- Scientific Research Methodologies.
- Effective Communications Skills
- Scientific Publishing
- Quality Criteria in Teaching
- Research Ethics
- Testing and Student Evaluation Methodologies

RESEARCH AREAS & INTERESTS

- ✓ I'm interested in developing deep neural network model which can be applied to solve generic object detection and recognition. Specifically, Self-organized maps (SOM) are employed to construct and learn this model.

- ✓ I'm also interested in Computer vision, Digital image processing, pattern recognition, machine learning, and feature extraction.

AWARDS AND HONORS

- ✧ **Scientific publishing award** from Aswan university, 2015, 2016
- ✧ **Ph.D. Scholarship** granted from Egyptian government in the period from Oct. 2005 until Oct. 2009.
- ✧ **Best young Author Award:** granted by the organizing committee of the 12th International Symposium on Artificial Life and Robotics.
- ✧ **Post-doc Scholarship** granted by Egyptian government in the period from Jan. 2013 till July 2013**.**
- ✧ **Visiting Researcher** at Tsukuba University, Japan in the period from March. 2014 till September 2014.
- ✧ **Entering** the Marquis Who's Who in the World®

TEACHING ACTIVITIES

During my work as assistant and associate professor in the faculty of Engineering, Aswan University, I have taught the following under-graduate and graduate courses:

- ➢ Programming Languages (Visual Basic.NET, Matlab, FORTRAN, C, C++, Java).
- ➢ Digital circuit design, Signal and System Analysis, Process Control, Microprocessor, Data Structure, Computer organization, Computer architecture, Computer Interfacing, Database.
- ➢ Digital Image Processing, Neural Networks, Artificial intelligence, Pattern Recognition, Computer Vision.

Also I taught many undergraduate course in the Arab Academy of Science, Technology (Aswan branch) which includes: C/C++ programming. Digital circuit design, Introduction to microprocessors, ….

RESEARCH AND GRADUATION PROJECTS

I have been supervised the following graduation projects:

- ➢ Vision-based industrial object inspection.
- ➢ Speaker Identification using Hidden Marcov Model
- ➢ Optical character recognition
- ➢ Hand Gesture recognition for human computer interaction
- ➢ Design of Analog and Digital Controller
- ➢ Design and implementation of a simple compiler

FUNDED RESEARCH PROJECTS

- I worked as a researcher in the project "**Robust Multimodal Audio-Visual Speech Recognition System based on Arabic Language**" which is funded by Science and Technology Development Fund (**STDF**) project- Ministry of Higher Education, Egypt via the research grant no. 1055.

OTHER ACTIVITIES

- **Technical Reviewer** for the following international Journals: IEEE Transaction on Neural Networks and Learning Systems, IET Computer Vision, IET Biometrics, International Journal of Applied Mathematics & Information Science
- **Technical Reviewer** for the following international conferences: The 22nd IEEE International conference in Pattern Recognition, 2014, The 17th IEEE International conference on Intelligent Transportation Systems, 2014, The 16th IEEE International conference on Intelligent Transportation Systems, 2013, The 2008 International Conference on Intelligent Computing
- **Software Consultant** for ITIDA, Egypt.
- **Technical Judge in Aswan Startup- weekend**, Upper Egypt in Action Events
- Serving as a **head of the Egyptian Student Union in Japan** (ESAJ) – Kyushu area. From 2007-2008
- Participate in organizing the first international conference between Egypt and Japan in Tokyo, 2008 ***http://www.esaj.net/EJICST2008/index.php***

SCIENTIFIC COMMITTEE AND ORGANIZATION

- Member in the Engineering syndicate since 1997.
- Member in IEEE Computational Intelligence from 2007-2010

PUBLICATIONS

1. M. Hassaballah and **S. Aly**, "Face Recognition: Challenges, Achievements, and Future Directions," I**ET Computer Vision**, Vol. 9, Iss.4, pp. 614-626, 2015.

2. **S. Aly**, L. Hassan and A. Sagheer, " Partially Occluded Pedestrian Classification using Three stage Cascaded Classifier," 9th IEEE International Conference on Computer Engineering and Systems (**ICCES 2014**), December 2014, Cairo.

3. **S. Aly**, "Partially occluded pedestrian classification using histogram of oriented gradients and local weighted linear kernel support vector machine," I**ET Computer Vision**, Vol. 8, No.6, PP. 620-628, December 2014.

4. **S. Aly**, "Learning Hierarchical Features Using Sparse Self-organizing Map

Coding for Image Classification," 2nd Advanced Machine Learning Technologies and Applications (**AMLTA 2014**), Communications in Computer and Information Science, Vol. 488, **Springer**, November 2014, pp. 321-330.

5. **S. Aly** and S. Mohammed, "Arabic Sign Language Recognition Using Spatio-Temporal Local Binary Patterns and Support Vector Machine," 2nd Advanced Machine Learning Technologies and Applications (**AMLTA 2014**), Communications in Computer and Information Science, Vol. 488, **Springer**, November 2014, pp. 36-45.

6. **S. Aly**, "Learning invariant local image descriptor using convolutional mahalanobis self-organizing map," ***Neurocomputing*** (142), October 2014, Elsevier, pp. 239-247.

7. A. Abdelbakky and **S. Aly,** " Appearance-based Arabic Sign Language Recognition using Hidden Markov Models," 2nd International Conference of Engineering and Technology (**ICET 2014**), Cairo, April 2014.

8. A. Sagheer , **S. Aly** and S. Anter, "Bimodal Speech Recognition for Robot Applications," International Conference on Man-Machine Interactions (**ICMMI 2013**), Poland , Springer, pp. 87-94 , October 2014.

9. **S. Aly**, D. Deguchi and H. Murase, "Blur-invariant Traffic Sign Recognition Using Compact Local Phase Quantization," 16th IEEE International Conference on Intelligent Transportation Systems (**ITSC 2013**), Netherland, October 2013, pp. 821-827.

10. **S. Aly**, L. Hassan, A. Sagheer and H. Murase, "Partially Occluded Pedestrian Classification using Part-based Classifiers and Restricted Boltzmann Machine Model," 16th IEEE International Conference on Intelligent Transportation Systems (**ITSC 2013**), Netherland , pp. 1065-1070, October 2013.

11. S. Antar, A. Sagheer, **S. Aly**. and M. F. Tolba, "AVAS: Speech database for multimodal recognition applications," 13th IEEE International Conference on Hybrid Intelligent Systems (HIS 2013), Tunisia, pp. 123-128, March 2013.

12. A. Sagheer and **S. Aly**, "An Effective Face Detection Algorithm Based on Skin Color Information," The 8th International Conference on Signal Image Technology and Internet Based Systems (**SITIS 2012**), Italy, November 2012, pp. 90-96.

13. L. Nasrat and **S. Aly**, "Evaluation of Flashover Voltage on Hydrophobic Polymer Insulators with Artificial Neural Network," International Journal of

Electrical and Computer Engineering *(***IJECE***),* Vol.2, No.4, August 2012 pp. 487-494.

14. A. Sagheer and **S. Aly**, "Integration of face detection and user identification with visual speech recognition," The 19th International Conference on Neural Information Processing (ICONIP 2012), Quarter, LNCS, Springer, 2012, Vol. 7667, pp. 479-487.

15. **S. Aly**, A. Shimada , N. Tsuruta and R.-I Taniguchi, "Robust Face Recognition Using Multiple Self-Organized Gabor Features and Local Similarity Matching," The 20th International Conference on Pattern Recognition (ICPR 2010), August 2010, Turkey, pp. 2909-2912.

16. **S. Aly**, N. Tsuruta, and R. i. Taniguchi, "Feature map sharing hypercolumn model for shift invariant face recognition," Journal of Artificial Life and Robotics, Springer, Vol.14, No.2, pp. 271-274, December 2009.

17. **S. Aly**, N. Tsuruta and R.-i. Taniguchi, "Self-Organized Gabor Features for Pose Invariant Face Recognition," Proceedings of the 16th International Conference on Neural Information Processing (**ICONIP 2009**), Thailand, Springer, pp. 733-742, December 2009.

18. **S. Aly**, N. Tsuruta and R.-i Taniguchi, "On Face Recognition Using Hierarchical Self-Organized Gabor Features," Proceeding of the IAPR Conference on Machine Vision Applications (MVA2009), Japan, pp. 475-478, May 2009.

19. **S. Aly**, N. Tsuruta, and R. i. Taniguchi, "Feature map sharing hypercolumn model for shift invariant face recognition," Proceedings of the 14th International Symposium on Artificial Life and Robotics (AROB 2009), Febraury 2009.

20. **S. Aly**, N. Tsuruta, and R.-i. Taniguchi, "Illumination Invariant Face Recognition using Normalized Gabor Features," Proceedings of the International Workshop on Computer Vision and Its Application to Image Media Processing (WCVIM), Japan, pp. 81-85, January 2009.

21. **S. Aly**, N. Tsuruta and R.-i. Taniguchi, "Face recognition under varying illumination using Mahalanobis self-organizing map," Journal of Artificial Life and Robotics, Springer, Vol.13, No.1, pp. 298-301, December 2008.

22. **S. Aly**, N. Tsuruta, R.-i Taniguchi and A. Shimada, "Visual feature extraction using variable map-dimension hypercolumn model," Proceeding of the IEEE International Joint Conference on Neural Networks (IJCNN 2008), Hong Kong, pp. 845-851, June 2008.

23. **S. Aly**, A. Sagheer, N. Tsuruta and R.-i Taniguchi, "Face recognition across illumination," Journal of Artificial Life and Robotics, Springer, Vol.12, No.1-2, pp. 33-37, March 2008.

24. Tsuruta, N., **S. Aly**. K. and Maeda, S. "Intelligent Robot Systems Based on Vision Technology-Dimensionality Estimation for Self-organizing Map by Using Spectral Clustering," *Lecture Notes in Computer Science* (5226), 2008, pp. 1156.

25. **S. Aly**, N. Tsuruta and R.-i. Taniguchi, "Face recognition under varying illumination using Mahalanobis self-organizing map," Proceedings of the 13th International Symposium on Artificial Life and Robotics (AROB 2008), pp. 207-210, January 2008.

26. N. Tsuruta, **S. Aly** and S. Maeda, "Dimensionality Estimation for Self-Organizing Map by Using Spectral Clustering," Proceeding of the 3rd International Conference on Intelligent Computing (ICIC 2007), *Advanced Intelligent Computing Theories and Applications-With Aspects of Theoretical and Methodological Issues*, Springer, LNCS Vol. 4681, pp. 1156-1163, August 2007.

27. **S. Aly**, A. Sagheer, N. Tsuruta and R.-i Taniguchi, "Face recognition across illumination," Proceedings of the 12th International Symposium on Artificial Life and Robotics (AROB 2007), January 2007.

28. N. Tsuruta, **S. Aly**, S. Maeda, S.y Takahashi and T. Morimoto, "Self-organizing map vs. spectral clustering on visual feature extraction for human interface," IEEE Proceeding of the 1st International Forum on Strategic Technology (IFOST 2006), Korea, pp. 55-58, October 2006.

29. **S. Aly**. "Incremental learning algorithm for function approximation and its realization using neural networks" Proceedings of the 46th IEEE international Midwest Symposium on Circuits and Systems (MWSCAS 2003), Cairo, Vol. 2, pp. 986-989, December 2003.