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B.A.Sc. University of Alexandria, 1968, M.A.Sc. and Ph.D. University of Windsor, 1971 and 1974 respectively. Registered as a Professional Engineer in Ontario since 1980.

Summary of Employment:

Alberta Government Telephones (1973-1975): Engineer in the Utility Coordination Group.
University of Alexandria (1975-1978): Assistant Professor taught courses in Circuits, EM waves, Computers. Also ran a consulting and a retail business while employed at the university.
University of Windsor (1978-present): Presently a full professor and department head. Has been active in several areas of research: DSP, Machine Vision, Image processing, Pattern recognition, IDTV and HDTV. Published over 130 papers. Accepted the position of Department Head in 2005. Grew the department from 11 faculty members to 17. Grew the graduate program from less than 50 graduate students to over 170 graduate students. Established two Canadian Research Chairs in the department. Added new graduate labs to the department (6 new lab were added to the 7 labs we previously had). Restructured our undergraduate program to cover more elective courses in more areas of expertise such as Automotive Sensors, Micro-electromechanical Systems, Power systems, etc. In our graduate program each new addition to our faculty members was allowed to add a new graduate course. Renovated our undergraduate laboratories and added a lab component to most of our undergraduate electrical engineering courses. Introduced the Honour Certificate Program (HCP) which acts as an optional 5th year to our undergraduate program and will help increase our undergraduate enrolment. The HCP provides an opportunity to past graduates to study new courses that were not part of their undergraduate education, and provides a pathway to our graduate program for those who can score high enough grades that makes them eligible for graduate admission.

Books:

Image Processing Theory, Algorithms and Architecture, McGraw-Hill (1994).
Numerical Techniques Using Object Oriented Programming in C++. (a manuscript). A first draft is available on:
<http://web2.uwindsor.ca/courses/engineering/ahmed/Lecture%20Notes.htm>

Patents:

4 U.S. patents in the area of real time video processing and improved definition Television (IDTV).

Publications:

More than 130 papers in the areas of DSP, Improved Definition Television, OCR, Pattern Recognition, Machine Vision and Metrology, Architectural design and VLSI.

Journal Papers (last 6 years):

1. M.J. Islam, Q. M.J. Wu, M. Ahmadi, M.A. Sid-Ahmed, "*Neural Network Based Handwritten Digits Recognition- An Experiment and Analysis*", International Journal of Computer and Electrical Engineering, Vol. 1, No. 2, June 2009 1793-8163.
2. M.J. Islam, Q. M.J. Wu, M. Ahmadi, M.A. Sid-Ahmed, "*Investigating the performance of Naive Bayes classifiers and K- Nearest Neighbour classifiers*", accepted for publication in Journal of Universal Computer Science, Graz University, Austria (Selected one of the best papers from International Conference on Convergence Information Technology (ICCIT' 2007), Nov. 21-23, 2007. Gyeongju, Korea).
3. Abdul Adeel Mohammed, Rashid Minhas, Q.M. Jonathan Wu*, M.A. Sid-Ahmed, "*An Efficient Fingerprint Image Compression Technique Based on Wave Atoms Decomposition and Multistage Vector Quantization*", accepted in the Journal of Integrated Computer Aided Engineering (Oct. 2009).
4. H. Rastgar, M.A. Sid-Ahmed, "*A Stereo Vision-based Bin Picking System Using Hopfield Neural Networks*", Vol. 18, Issue 3 (2009) pp.443-463.
5. S. Huang, M. Ahmadi, M.A. Sid-Ahmed, "*A hidden Markov model-based character extraction method*", Pattern Recognition Journal, Vol. 41, 2890-2900, 2008.
6. I. El-Feghi, M.A. Sid-Ahmed, M. Ahmadi, "*Automatic Localization of Craniofacial Landmarks using Multi Layer Perceptron as a Function Approximator*", Pattern Recognition Letters 27, 2006, pp544-550.
7. Y. Al-Ginahi, D. Fikri, M.A. Sid-Ahmed, "*A Neural Based Page Segmentation System*", Journal of Circuits, Systems and Computers, 14(1), 109-122, 2005.
8. I. El-Feghi, M.A. Sid-Ahmed, M. Ahmadi, "*Automatic Localization of Craniofacial Landmarks for Assisted Cephalometry*", Pattern Recognition Journal, Vol. 37, No. 3, March 2004, pp. 609-621.

Conference Papers (last 6 years):

1. R. Minhas, A. Abdul Mohammed, Q.M. Jonathan, M. A. Sid-Ahmed, "*3D Shape from Focus and depth Map Computation Using Steerable Filters*", Lecture Notes in Computer Science, 5627, 573-582, 2009.
2. R. Minhas, A. Abdul Mohammed, Q.M. Jonathan, M. A. Sid-Ahmed, "*A Novel Technique*

- for Human Face Recognition using Nonlinear Curvelet Feature Subspace*”, Lecture Notes in Computer Science, 5627, 512-521, 2009.
3. A. Abdul Mohammed, Q.M. Jonathan, M. A. Sid-Ahmed, “*Application of Bidirectional Two-dimensional Principal Component Analysis of Curvelet Feature Face Recognition*”, 2009, International conference on Systems, Man and Cybernetics.
 4. A. Abdul Mohammed, R. Minhas, Q.M. Jonathan, M. A. Sid-Ahmed, “*Generic Fingerprint Image Compression Standard Based on Wave Atoms Decomposition*”, 2009, International Conference on Image Processing.
 5. I. El-Feghi, M.A. Sid-Ahmed, M. Ahmadi, 2003, “*Automatic Localization of Craniofacial Landmarks for Assisted Cephalometry*”, Proc. of the 2003 IEEE International Symp. on Circuits and Systems (ISCAS'2003), Bangkok, Thailand, May 25-28, 2003, Vol. III., pp. 630-633.
 6. I. El-Feghi, M.A. Sid-Ahmed, M. Ahmadi, 2003, “*Automatic Localization and Identification of Craniofacial Landmarks Using Neuro-Fuzzy Approach and Parametric Modeling*”, Proc. of the First Annual IEEE Northeast Workshop on Circuits and Systems (NEWCAS), June 17-20, 2003, Montreal, Canada, pp. 173-176.
 7. I. El-Feghi, M.A. Sid-Ahmed, M. Ahmadi, 2003, “*Improving Cephalometric Landmark Localization Using Multi-Layer Perceptron*”, Proc. Of the Sixth Annual International Conference on Medical Image Computing and Computer Assisted Intervention, Montreal, Canada, November 15-18, 2003, pp 643-654
 8. I.El-Feghi, M.A. Sid-Ahmed, M.Ahmadi, “*Location of Craniofacial Landmarks on X-ray Images by Employing Fuzzy Neural Networks*”, 45th IEEE Midwest Symp. On Circuits and Systems, Tulsa, Oklahoma, USA, Vol.3, pp 348-351, Aug. 2002
 9. I. El-Feghi, M.A. Sid-Ahmed, M. Ahmadi”, *Improving Cephalometric Landmark Localization Using Multi-Layer Perceptron*” ICISP’03, Agadir, Morocco, pp558-565, June 2003.
 10. L. Liang, M. Ahmadi, M.A. Sid-Ahmed, “*Design of 2-D IIR Filters with Canonical Signed-Digit Coefficients Using Genetic Algorithm*”, To appear in the proceedings of the 46th IEEE Midwest Symposium on Circuits and Systems, Cairo,Egypt, Dec. 2003
 11. I. El-Feghi, Y. Alginahi, M.A. Sid-Ahmed, M. Ahmadi. “*Craniofacial Landmarks Extraction by Partial Least Squares Regression*” Proc. Of 2004 IEEE International Symp. On Circuits and Systems, pp IV-45-48, May 2004 ,Vancouver, Canada
 12. I. El-Feghi, S. Huang, M.A. Sid-Ahmed, M. Ahmadi, “*Contrast Enhancement of Radiograph Images based on Novel Heterogeneity Measures*”, Proc. Of 2004 IEEE International Conf. on Image Processing, Oct. 2004, Singapore pp 989-992
 13. I. El-Feghi, S. Huang, M.A. Sid-Ahmed, M. Ahmadi, “*X-Ray Image Segmentation Using Auto Adaptive Fuzzy Entropy*”, Proc. Of 2004 IEEE Midwest Symp. On Circuits and Systems, July 2004, Hiroshima ,Japan, pp III-499-502
 14. Y. Alginahi, M.A. Sid-Ahmed, M. Ahmadi, “*Optical Character Recognition System Based on a Novel Fuzzy Descriptive Features*”, Proc. Of 2004 International Conference on Signal Processing, August-September,2004, Beijing, China,(CD-ROM proceedings does not contain page number)
 15. Y. Alginahi, M.A. Sid-Ahmed, M. Ahmadi, “*Local Thresholding of Composite Documents Using Multi-Layer Perceptron Neural Network*”, proceeding of 2004 IEEE Midwest Symposium On Circuits and Systems, July 2004, Hiroshima, Japan, pp. I-209-212

16. Li Liang, M. Ahmadi, M.A. Sid-Ahmed, "***Design of Complementary Filter Pairs with Canonical Signed-Digit Coefficients Using Genetic Algorithm***", Proceedings of 2004 IEEE-ICECS, Dec.2004, Tel-Aviv, Israel, pp 611-614
17. H. Uppalapati, H. Rastgar, M. Ahmadi, M. A. Sid-Ahmed, "***Design of Quadrature Mirror Filter Banks with Canonical Signed Digit Coefficients using Genetic Algorithm***" Proceedings of International Conference on Communication Circuits and Systems, May 2005, Hong Kong ,pp 682-686.
18. Y. Alginahi, M.A. Sid-Ahmed, M. Ahmadi, "***Extraction of Objects and Page Segmentation of Composite Documents with Non-Uniform Background***" Proceedings of 2nd International Conference on Informatics in Control, Automation and Robotics. Sept.14-17 ,2005,Barcelona,Spain,pp344-347
19. M. J. Islam, J. Wu, M. Ahmadi, M.A. Sid-Ahmed, "***Grey Scale Image Segmentation Using Minimum Error Thresholding Technique***", Proc. of 6th International Conference for Upcoming Engineers, June 2007, Toronto Canada, "Recipient of Best Technical Paper Award Certificate"
20. H. Rastgar, M.A. Sid-Ahmed, M. Ahmadi, "***3D Position Sensing Using Hopfield Neural Network Stereo Matching Algorithm***", Proc. of IEEE International Conference on Circuits and Systems, May 21-24 ,2006, Island of Kos,Greece.pp3638-3641
21. S. Huang, M.A. Sid-Ahmed, M.Ahmadi, I. El-Feghi, "***A Binarization Method for Scanned Documents Based on Hidden Markov Model***" Accepted for publication in the Proc. of IEEE International Conference on Circuits and Systems, May 21-24, 2006, Island of Kos,Greece.pp4309-4312
22. S. Huang, M. Ahmadi, M.A. Sid-Ahmed, "***An Edge Based Thresholding Method***" Proceedings of 2006 IEEE International Conference on Systems, Man, and Cybernetics, October 8-11, Taipei ,Taiwan, pp1603-1608.
23. I. El-Feghi, M. Galhoud, M.A. Sid-Ahmed, M.Ahmadi, "***Three Level Gray-Scale Images Segmentation Using Non-extensive Entropy***", Proc. of 4th International Conference on Computer Graphics, Imaging and Visualization CGIV'07, Aug. 14-17,2007, Bangkok, Thailand. Pp304-307.
24. I. El-Feghi, N. Adem, M.A. Sid-Ahmed, M. Ahmadi, "***Improved Co-occurrence Matrix as a Feature Space for Relative Entropy-based Image Thresholding*** Proc. of 4th International Conference on Computer Graphics, Imaging and Visualization CGIV'07, Aug. 14-17,2007, Bangkok, Thailand.pp314-317.
25. I. El-Feghi, H. Aboasha, M.A. Sid-Ahmed, M. Ahmadi "***Content-Based Image Retrieval Based on Efficient Fuzzy Color Signature***" Proc. of 2007 IEEE International Conference on Systems, Man and Cybernetics, Oct. 2007 Montreal, Canada pp1118-1124.
26. M.J. Islam, Q.M. Jonathan Wu, M. Ahmadi, M. A. Sid-Ahmed "***Investigating the Performance of Naïve-Bayes Classifiers and K-Nearest Neighbor Classifiers***" Proc. of ICCIT'07, Nov. 21-23, 2007, Hotel Hyundai, Gyeongju, Korea, pp1541-1546.
27. M. J. Islam, J. Wu, M. Ahmadi, M.A. Sid-Ahmed, "***Grey Scale Image Segmentation Using Minimum Error Thresholding Technique***" CD-ROM Proceeding of 2007 International Conference for Upcoming Engineers, Toronto, Canada. Winner of the Technical Paper Award.
28. Elham Shahinfard, M.A. Sid-Ahmed. M. Ahmadi, "***A Motion Adaptive Deinterlacing Method with Hierarchical Motion Detection Algorithm***" Proc. Of 2008 IEEE International conference on Image Processing. Oct. 2008, San Diego Cal., USA, pp889-892.

29. I. El-Feghi, M. Galhood, M. A. Sid-Ahmed, M. Ahmadi, “*Automated 2-D Cephalometric Analysis of X-ray by Image Registration Approach Based on Least Square Approximator*” Proc. Of 30th Annual International IEEE-EMBS Conference, August 2008, Vancouver, BC, Canada, pp. 3949-3952.
30. I. El-Feghi, M. Errateeb, M. Ahmadi, M.A. Sid-Ahmed, “*An Adaptive Ant-Based Clustering Algorithm with Improved Environment Perception*” Proc. of 2009 IEEE International Conference on Man, Systems and Cybernetic, San Antonio, Texas, Oct. 2009, pp 1476-1483.

Patents:

1. **A Method And An Apparatus For 2-D Filtering A Raster Scanned Image In Real-Time.** (M.A. Sid-Ahmed and H.J. Kaufman), US Patent # 4,122,788, issue date 6/16/92.

This is a structure that can be used for image crisping, 2-D comb filtering, etc. The hardware realization uses analog components and is much more economical than digital realization..

2. **A 2-D Real-Time Semi-Systolic Filter Apparatus for HDTV.** (M.A. Sid-Ahmed and H.J. Kaufman), US Patent number 5,245,433, issue date 9/14/93.

This is an economical method for realizing 2-D digital transfer functions for such applications as deghosting, image deblurring, image enhancement, etc.

3. **Real-Time Television Image Pixel Multiplication Methods and Apparatus** (Line doubler) (M.A. Sid-Ahmed), US patent # 5,668,602, issue date Sept.16, 1997.

This patent describes circuits for doubling, quadrupling, etc. the number of lines at the receiver without requiring any changes to the transmission standard (NTSC, PAL, SECAM, etc.). The concept on which these circuits are designed is based on the sampling theorem and therefore the images are as best as you can get. The circuits are designed to handle interlaced scanned TV images in real-time without any loss of image frames. In the patent, circuits are also disclosed for displaying the TV images using either progressive or interlaced scanning methods.

4. **Interpixel and Interframe Interpolation of Television Pictures with Conversion from Interlaced to Progressive Scanning** (M.A. Sid-Ahmed) US Patent Number 5,621,470, issued April 15, 1997.

In this patent, circuits are described for definition enhancement through pixel, line and frame interpolation using 3-D filtering techniques.

Graduate Supervision: (last 6 years)

1. Michael Chukwu, M.A.Sc student (completed 2009).
2. Shahinfard Elham, Ph.D student (completed 2009)
3. Mohammed Islam, Ph.D. student, co-supervised with Dr. M. Ahmadi (in progress).
4. Imam Makeremi, M.A. Sc student, co-supervised with Dr. Abdel-Raheem (in progress).
5. Mahmood Abd, Ph.D student (in progress).
6. Houman Rastgar, M.A.Sc student (completed 2006).
7. Haritha Uppalapati, M.A.Sc student (completed 2004).
8. Yasser Alginahi, Ph.D student (completed 2004).
9. Yi Lin, M.A.Sc student (completed 2003).
10. Li Liang, M.A.Sc student (completed 2003).
11. Idris El-Feghi, Ph.D student (completed 2003).

Grants:

NSERC grant \$20,000 per year for 5 years starting 2008.

Over the years I have held a variety of industrial as well NSERC grants.