

Education

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|-------------------------------|---|------|
| Ph.D. with Distinction | Computer Engineering, University of New Mexico | 2003 |
| M.Sc. | Computer Engineering, Mansoura University, Egypt | 1997 |
| Graduate Diploma | Software Engineering, Information Technology Institute, Egypt | 1997 |
| B.Sc. | Electronic Engineering, Mansoura University, Egypt | 1994 |

Experience

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|--------------------------------|---|-----------------------|
| • Chief Executive Officer | Video Semantics | 2008 – Present |
| • Assistant Research Scientist | University of Maryland | 2005 – Present |
| • Adjunct Faculty | Simon Fraser University, Canada | 2010 – Present |
| • Research Associate | University of Maryland | 2004 – 2005 |
| • Visiting Professor | New Mexico Institute of Technology | Jan. 2003 – Dec. 2003 |
| • Graduate Student | University of New Mexico | 2001 – 2003 |
| • Graduate Student | University of Nevada, Reno | 2000 – 2001 |
| • Software Engineer | Oasis Technologies, Toronto, Canada | 1999 – 2000 |
| • Research Engineer | Research and Development International, Egypt | 1997 – 1999 |
| • Control Engineer | Geisum Oil Company | 1995 – 1996 |
| • Software Engineer | KARMOLEED Engineering and Trading, Egypt | 1994 – 1995 |

Journal Publications

- [1] Mohamed Abdelkader, **Wael Abd-Almageed** and Rama Chellappa, “Gesture and Action Recognition via Modeling Trajectories on Riemannian Manifolds,” *Computer Vision and Image Understanding*, Vol. 115, No. 3, 2011.
- [2] Aly El-Osery, **Wael Abd-Almageed** and Moustafa Youssef, “Calibration-Free RF-Based Localization Algorithm for Actuator/Sensor Networks using Particle Filters,” *IEEE Antennas and Propagation Magazine*, August 2006.
- [3] **Wael Abd-Almageed**, Aly El-Osery and Christopher Smith, “SLA-Based Nonparametric Expectation Maximization,” Springer’s *Soft Computing Journal*, vol. 10, no. 11, Sept. 2006.
- [4] **Wael Abd-Almageed**, Christopher E. Smith, “Active Deformable Models using Density Estimation,” *International Journal of Image and Graphics*, Special Issue on Deformable Models for Image Analysis and Pattern Recognition, Vol. 3, No. 4, 2004.

Conference Publications

- [1] Jayant Kumar, David Doermann, **W. Abd-Almageed**, “Segmentation of Handwritten Text Lines in the Presence of Touching Components,” Submitted to the International Conference on Document Analysis and Recognition, 2011.
- [2] Jayant Kumar, Rohit Prasad, Huiagu Cao, **W. Abd-Almageed**, David Doermann and Prem Natarajan, “Shape Codebook based Handwritten and Machine Printed Text Zone Extraction,” Document Recognition and Retrieval 2011
- [3] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, and Mohamed F. Chouikha, “One-Class Support Vector machines vs. Two-class Support Vector Machines for Normal Mammogram Detection”, IEEE Workshop on Applied Imagery Pattern Recognition (AIPR’2010), Washington, DC, October 2010. [Best Student Paper Award].
- [4] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, and Mohamed F. Chouikha, “Using Local Binary Pattern features for Normal Mammogram Detection”, To appear in proceedings of the 23rd IEEE International Symposium on Computer-Based Medical Systems (CBMS’2010), Perth, Australia, October 2010.
- [5] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, and Mohamed F. Chouikha, “Detection of Normal Mammograms based on Breast Tissue Density using GLCM Features”, To appear in proceedings of the Eighth IASTED and IEEE EMBS (Engineering in Medicine and Biology Society) International Conference on Biomedical Engineering (Biomed’2011), Innsbruck, Austria, February 2011.
- [6] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, and Mohamed F. Chouikha, “Effect of Breast Density in Selecting Features for Normal Mammogram Detection”, To appear at the 8th IEEE International Symposium on Biomedical Imaging (ISBI’2011), Chicago, IL, April 2011.
- [7] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, and Mohamed F. Chouikha, “Pre-CAD Normal Mammogram Detection using Gray Level Co-occurrence Matrix Features”, To appear at the Society of Imaging Informatics in Medicine Annual Meeting (SIIM’2011), Washington, DC, June 2011.
- [8] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, and Mohamed F. Chouikha, “Screening-out Normal Mammograms using Breast Density Information”, in review in proceedings of the 8th Era of Hope Workshop, Department of Defense (DOD) Breast Cancer Research Program (BCRP), paper no. BC004067-3386, Orlando, FL, August 2011.
- [9] Mona Y. Elshinawy, Abdel-Hameed A. Badawy, **Wael W. Abdelmageed**, Gretchen L. Gierach and Mohamed F. Chouikha, “Tissue Type based Pre-CAD Normal Mammogram Detection”, in submission to Society for Imaging Informatics in Medicine (SIIM) Journal of Digital Imaging.
- [10] Jayant Kumar, **Wael Abd-Almageed**, Le Kang and David Doermann, “Handwritten Arabic Text Line Segmentation using Affinity Propagation,” Document Analysis Systems, 2010.
- [11] Jayant Kumar, **Wael Abd-Almageed**, David Doermann, “Handwritten Arabic Text Zone Detection using A Shape Codebook,” Submitted to the International Conference on Pattern Recognition, 2010.
- [12] Mona Elshinawy, **Wael Abd-Almageed** and Mohamed Chouikha, “Normal Mammogram Classification Based on Tissue Type,” Submitted to the International Conference on Pattern Recognition, 2010.
- [13] Jayant Kumar, **Wael Abd-Almageed** and David Doermann, “Random Subspace-based Data Sampling for Large Scale Support Vector Learning,” Submitted to the International Conference on Machine Learning, 2010.
- [14] Mohamed Hussein and **Wael Abd-Almageed**, “Efficient Kernel Matrix Approximation for Large Scale Machine Learning Applications on GPUs,” Supercomputing, Portland, Oregon, 2009.
- [15] Mohamed Hussein and **Wael Abd-Almageed**, “Approximate Kernel Matrix Computation on GPUs for Large Scale Learning Applications,” International Conference on Super Computing, New York, New York, 2009.

- [16] **Wael Abd-Almageed**, Jayant Kumar and David Doermann, "Page Rule-Line Removal using Linear Subspaces in Monochromatic Handwritten Arabic Documents," International Conference on Document Analysis and Recognition, Barcelona, Spain, 2009.
- [17] M. Refaey, **W. Abd-Almageed** and L. Davis, "A Logic Framework for Sports Video Summarization using Text-Based Semantic Annotation," 3rd International Workshop on Semantic Media Adaptation and Personalization, Prague, Czech Republic, December, 2008.
- [18] **W. Abd-Almageed**, M. Agrawal, W. Seo and D. Doermann, "Document Zone Classification using Partial Least Squares and Hybrid Classifiers," International Conference on Pattern Recognition, Tampa, Florida, December, 2008.
- [19] Ryan Blace, Mohamed Eltoweissy and **Wael Abd-Almageed**, "Threat-Aware Clustering in Wireless Sensor Networks," IFIP Conference on Wireless Sensors and Actor Networks, Ottawa, Canada, 2008
- [20] Aly I. El-Osery, Sabit Ekin and **Wael Abd-Almageed**, "RF-Based Location Determination in Heterogeneous Sensor Networks Using Rayleigh Fading Channel," 2nd Workshop on Mission Critical Networking, 2008.
- [21] **Wael Abd-Almageed** and Larry Davis, "Probabilistic Feature Selection for Human Detection," IEEE International Conference on Robotics and Automation, Pasadena, California, May, 2008.
- [22] **Wael Abd-Almageed**, "Online, Simultaneous Shot Boundary Detection and Key Frame Extraction for Sports Videos using Rank Tracing," IEEE Int. Conf. on Image Processing, San Diego, California, October, 2008.
- [23] **W. Abd-Almageed**, M. Hussein, M. Abdelkader and L. Davis," Real-Time Human Detection and Tracking from Mobile Vehicles," IEEE International Conference on Intelligent Transportation Systems, 2007.
- [24] **Wael Abd-Almageed**, Mohamed Hussein and Larry Davis, "Tracking Articulating Objects from Ground Vehicles using Mixtures of Mixtures," IEEE/RSJ International Conference on Intelligent Robots and Systems, China, October 2006.
- [25] **Wael Abd-Almageed** and Larry Davis, "Robust Appearance Modeling for Pedestrian and Vehicle Tracking," Springer's Lecture Notes in Computer Science, 2006.
- [26] **Wael Abd-Almageed** and Larry Davis, "Density Estimation using Mixtures of Mixtures of Gaussians," European Conference on Computer Vision, 2006.
- [27] Mohamed Hussein, **Wael Abd-Almageed**, Yang Ran and Larry Davis, "A Real-Time System for Human Detection, Tracking and Verification from a Moving Camera," IEEE International Conference on Computer Vision Systems, 2006.
- [28] **Wael Abd-Almageed**, Brian Burns and Larry Davis, "Identifying and Segmenting Human Motion for Mobile Robot Navigation using Alignment Errors," International Conference on Advanced Robotics, Seattle, WA. 2005.
- [29] Aly El-Osery, David Baird and **Wael Abd-Almageed**, "A Learning Automata Based Power Management for Ad-Hoc Networks," IEEE International Conference on Systems, Man and Cybernetics, 2005.
- [30] Yang Ran, Qinfen Zheng, Isaac Weiss and Larry Davis **Wael Abd Almageed**, "Pedstrian Classification from Moving Platforms using Cyclic Motion Patterns," IEEE International Conference on Image Processing, 2005.
- [31] **Wael Abd-Almageed**, Aly El-Osery and Christopher Smith, "A Hybrid Fuzzy-Statistical Contour Model for Magnetic Resonance Image Segmentation and Target Tracking," *SPIE Defense and Security Symposium*, Orlando, Florida, April 2004.
- [32] Samah Ramadan, **Wael Abd-Almageed** and Christopher Smith, "Non-Intrusive Eye Detection and Tracking: A Review", In final preparation to be submitted to *Computer Vision and Image Understanding*, Special Issue on Eye Detection and Tracking, Oct. 2003

- [33] **Wael Abd-Almageed**, Aly El-Osery, Christopher E. Smith, “Non-Parametric Expectation Maximization: A Learning Automata Approach,” Proceedings of the *IEEE International Conference on Systems, Man and Cybernetics*, October 2003, Washington, DC.
- [34] **Wael Abd-Almageed**, Christopher E. Smith and Samah Ramadan, “Kernel Snakes: A Non-parametric Active Deformable Model,” Proceedings of the *IEEE International Conference on Systems, Man and Cybernetics*, October 2003, Washington, DC.
- [35] **Wael Abd-Almageed**, Sami M. Fadali and George Bebis, “A Non-intrusive Kalman Filter-Based Tracker for Pursuit Eye Movement,” *The American Control Conference*, Alaska, May 2002.
- [36] **Wael Abd-Almageed** and Christopher E. Smith, “Mixture Models for Dynamic Statistical Pressure Snakes,” *IEEE International Conference on Pattern Recognition*, Québec City, Canada, August 2002.
- [37] **Wael Abd-Almageed** and Christopher E. Smith, “Contour Migration: Solving Object Ambiguity with Shape Space Visual Guidance,” *IEEE/RSJ International Conference Intelligent Robots and Systems*, Switzerland, September 2002.
- [38] **Wael Abd-Almageed**, Christopher E. Smith, “Hidden Markov Model for Silhouette Classification,” *World Automation Congress*, Orlando, Florida, June 2002.
- [39] Samah Ramadan, **Wael Abd-Almageed** and Christopher Smith, “Eye Tracking using Active Deformable Models,” *The III Indian Conference on Computer Vision, Graphics and Image Processing*, Ahmedabad, India, December 2002.
- [40] **Wael Abd-Almageed**, Elsayed Elkonyally and Sabry Saraya, “Walsh Transform-Based Feature Matching Algorithm,” *Proceedings of the 22nd International Conference on Statistics and Computers and its Applications*, Cairo, Egypt, 1997.
- [41] Elsayed Elkonyally, Sabry Saraya and **Wael Abd-Almageed**, “Point Feature Matching Adopting Walsh Transform,” *Proc. SPIE*, Vol. 3208, p. 74-84.

Patents

- [1] **W. Abd-Almageed**, M. Hefeeda and B. Abdelaziz, “Semantic Segmentation and Tagging Engine” US Patent No. 13089238.
- [2] Mohamed Hussein and **Wael Abd-Almageed**, “Method and Apparatus for Large Scale Kernel Methods on Graphics Processing Units,” Patent-Pending, University of Maryland.

Teaching Experience

- | | | |
|----------------------------|--------------------------|-------------------------|
| • Digital Design | New Mexico Tech. | Spring 2003 – Fall 2003 |
| • Intermediate Programming | University of New Mexico | Spring 2003 |

Invited Talks

- Computational Challenges in Mining Large Scale Observational Medical Outcome Data, Drug Information Association, March, 2011
- Gesture Recognition via Modeling Silhouette Trajectories on a Riemannian Manifold, Simon Fraser University, August, 2010
- Towards Large Scale Kernel Methods on GPUs, Simon Fraser University, Canada, December, 2009
- *Active Contour-Based Framework for Tracking and Segmentation*, University of Maryland at College Park, November 2003.

- *Recent Advances in Active Contour Models*, New Mexico Institute of Mining and Technology, November 2002.

Thesis Supervision and Committees

- Mudit Agrawal, Ph.D., University of Maryland 2011
- Fei Gao, M.S., Simon Fraser University, Expected 2011
- Taher Dameh, M.S., Simon Fraser University, Expected 2011
- Mohamed Abdelkader, Ph.D., University of Maryland, 2010
- Mohamed Hussein, Ph.D., University of Maryland, 2009

Funding

- **National Science Foundation:** “Multimodal Semantic Video Retrieval and Summarization,” Funded, PI, \$500,000, 2011 -- 2013.
- **National Science Foundation:** “Multimodal Semantic Video Retrieval and Summarization,” Funded, PI, \$100,000, July – December 2009.
- **Maryland Technology Development Corporation,** “Automatic Segmentation and Tagging of Broadcast Video”, Funded, PI, \$75,000, April 2011 – April 2012.
- **University of Maryland-National Cancer Institute Partnership for Cancer Technology:** “Investigating the Correlation between Gene Expression and DNA Methylation Patterns in Human Hepatocellular Carcinoma using Large Scale Multiple Kernel Clustering via Map-Reduce”, Funded, PI, \$60,000, 2011.
- **University of Maryland Institute For Advanced Computer Studies Research Frontiers Award:** “Correlation Analysis of Gene Expression and Programmed -1 Ribosomal Frameshifting and Their Effect on Predicting Survival Rates of Human Hepatocellular Carcinoma” Funded, PI, \$60,000, 2011.
- **ARL’s Robotics Collaborative Technology Alliance:** “Probabilistic Feature Selection for Improving Human Detection Systems,” PI, \$225,000, 2007--2009
- **ARL’s Robotics Collaborative Technology Alliance:** “Human Detection and Tracking from Unmanned Ground Vehicles,” Co-PI, \$568,000, 2006--2009
- **University of New Mexico NASA-PURSUE Center:** “Developing a Generic Hidden Markov Model Matlab/C Library for Signal and Image Processing Research”, \$3650, Spring 2002
- **University of New Mexico NASA-PURSUE Center:** “Face Segmentation and Recognition using Mixtures of Gaussians”, \$3650, Summer 2001.

Awards and Recognition

- **2007 Who’s Who in America**
- **Best Technical Performance,** DARPA Video Verification and Identification (VIVID) Project, Spiral II, July 2004
- **Outstanding Graduate Student,** Department of Electrical and Computer Engineering, University of New Mexico, Fall 2003.
- **Best Speaker,** 2002 American Control Conference.
9-month full-time scholarship for a graduate diploma in software engineering from the Information and Decision Support Center, Egyptian Cabinet, which is awarded to the **distinguished graduates** from Egyptian universities.

Service

Reviewer

- National Science Foundation, panel reviewer.
- International Journal on Computer Vision
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans
- Elsevier's Computer Vision and Image Understanding Journal
- Springer's Neural Processing Letters
- Springer's Soft Computing Journal
- Elsevier's Journal of Network and Computer Applications
- Springer's Signal, Image and Video Processing Journal
- International Journal of Automation and Control, InderScience Publishers.
- World Scientific's International Journal of Image and Graphics
- ISATED International Journal on Robotics and Automation
- ISATED Journal on Computers and Applications
- IEEE International Conference on Automatic Face and Gesture Recognition, 2006.
- IEEE Conference on Computer Vision and Pattern Recognition, 2006, 2009
- IEEE International Conference on Advanced Information Networking and Applications, Taiwan, 2006
- International Conference on Image Analysis and Recognition, 2004--2005.
- IEEE International Conference on Image Processing, 2008--2009
- IEEE Intelligent Vehicles, 2008.
- IEEE International Conference on Intelligent Robots and Systems, 2005, 2008
- IEEE International Conference on Robotics and Automation, 2008--2009

Conference Committees

- PC member, International Conference on Document Analysis and Recognition, 2009.
- PC member, People Detection and Tracking Workshop, in conjunction with IEEE International Conference on Robotics and Automation, 2009.
- Student Activities co-Chair, IEEE International Conference on Systems, Man and Cybernetics, 2009
- Program Committee Member, International Conference on Image Analysis and Recognition, 2006--2009.
- Program Committee Member, International Conference on Computer Vision Theory and Applications (VISAPP) 2007--2008
- Program Committee Member, 6th ACS/IEEE International Conference on Computer Systems and Applications, Qatar, 2008
- Panel Chair, International Workshop on Collaboration and Cognition in Next Generation Networks, 2008
- Chair, IEEE Workshop on Human Detection from Mobile Platforms in conjunction with IEEE International Conference on Robotics and Automation, 2008.
- Publications Chair, IEEE Symposium on Computational Intelligence in Robotics and Automation, Jacksonville, Florida, 2007
- Session Chair, International Conference on Advanced Robotics, Seattle, Washington, 2005

Session Chair, IEEE International Conference on Systems, Man and Cybernetics, Washington D.C., 2003

References

Larry S. Davis, Professor

Chair, Department of Computer Science
University of Maryland and College Park
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(301) 405-2662

Rama Chellappa, Professor

Department of Electrical and Computer Engineering
University of Maryland and College Park
College Park, MD 20742
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Martial Hebert, Professor

The Robotics Institute
Smith Hall
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213
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David Doermann, Senior Research Scientist

3451 AV Williams Building
College Park, MD 20742
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(301) 405-1767

Mohamed Kamel, Professor

Department of Electrical and Computer Engineering,
University of Waterloo
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Larry Matthies, Senior Research Scientist

NASA's Jet Propulsion Laboratory

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David Bader, Associate Professor
College of Computing
Georgia Institute of Technology
Atlanta, GA 30332