

Abdel-Hameed A. Badawy, *Ph.D.*

CONTACT INFORMATION

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EDUCATION

Ph.D., *Computer Engineering*, University of Maryland, College Park, MD, USA, Dec. 2013
“Locality Transformations and Prediction Techniques for Optimizing Multicore Memory Performance”

M.Sc., *Computer Engineering*, University of Maryland, College Park, MD, USA, Aug. 2002
“Evaluating the Impact of Memory System Performance on Software Prefetching and Locality Optimizations”

Diploma, *Software Development*, Information Technology Institute, Egypt, July 1997
Ranked among the top 5 trainees out of more than 200.

Graduation Project: “Mobile Aglets (Agent) System”

B.Sc., *Computers & Control concentration*, Mansoura University, Egypt, July 1996
Degree conferred with Distinction and Honor. Ranked 2nd on a class of 85 students.

Capstone Project: “Computer-controlled Robot Arm System”

RESEARCH INTERESTS

Computer Architecture, High Performance Computing, On Chip Optical Interconnects, Optical Computing, Locality Optimizations, Green Computing, and Computational Intelligence Techniques for Compilers & Architectures, and Computer Engineering Education.

WORK EXPERIENCE

Assistant Professor (Tenure-Track) Klipsch School of Electrical & Computer Engineering
New Mexico State University, Las Cruces, NM June 2016 – present

Assistant Professor (Tenure-Track) Electrical Engineering Department
Arkansas Tech University, Russellville, AR Aug. 2013 – May 2016

Lead Research Scientist High-Performance Computing Laboratory (HPCL)
The George Washington University, Washington, DC May 2014 – January 2016

FUNDING

- Tarek El-Ghazawi (PI), Volker Sorger (Co-PI), Vikram Narayana (Co-PI), Abdel-Hameed Badawy (Collaborator) “Dynamically Adaptive Hybrid Nanoplasmonic NoCs”, Air Force Office of Scientific Research (AFOSR), award # FA9550-15-1-0447, \$752,000, October 2015.
- Patricia Buford (PI), Abdel-Hameed Badawy (Co-PI, Team Coordinator), Carl Greco (Co-PI), Mohamed Ibrahim (Co-PI) “IUSE/PFE: RED: Putting “Tech Back in Tech: Electrical Engineering leading the Revolution at Arkansas Tech University”, National Science Foundation (NSF), [NSF 15-607](#), \$2,000,000, December 2015 [Not Funded].

PATENTS

- Tarek El-Ghazawi, Volker Sorger, Vikram Narayana, Abdel-Hameed A. Badawy, and Shuai Sun, “The Reconfigurable Optical Coprocessor (ROC)”, Provisional Patent, *submitted, Dec.* 2015.
- Volker Sorger, Shuai Sun, Vikram Narayana, Abdel-Hameed A. Badawy, and Tarek El-Ghazawi, “Hybrid Photonic Plasmonic Interconnects (HyPPI) with intrinsic and extrinsic modulation options.”, Provisional Patent, *submitted, Dec.* 2015.

ADVISING & MENTORING

Graduate Students

1. [Nafiul Siddique, Expected PhD 2016](#), New Mexico State University [Co-advised with Jeanine Cook]. I am working with Nafiul on an alternative to conventional caches called Local Memory Store (LMStr) which is more performance and energy efficient. We have a publication in review and others in submission and preparation..
2. [Mohammad Qayum, Expected PhD 2016](#), New Mexico State University [Co-advised with Jeanine Cook]. I am working with Qayum on studying Transactional Memory system and we are introducing an adaptable Hybrid Transactional Memory. We have a publication in review and others in submission and preparation.
3. [Po-Chou Su, Expected PhD 2017](#), New Mexico State University [Co-advised with Jeanine Cook]. I am working with Po-Chou on developing a new simulation infrastructure that is robust, fast and accurate enough for conducting memory system research on instead of having either a slow and accurate simulators or fast and inaccurate simulators.
4. [Ahmad Anbar, PhD 2016](#), The George Washington University [Research Mentor]. I worked closely with Ahmad on Hierarchical Locality exploitation to enable Exascale Computing.
5. [Shuai Sun, PhD Student](#), The George Washington University [Research Mentor]. I closely worked with Shuai on the development of a Hybrid Photonic Plasmonic Interconnects (HyPPI) for Networks on Chip and on Optical Computing.
6. [David Newsom, PhD 2015](#), The George Washington University [Research Mentor]. I worked with David on Power/Energy measurement and its application to Energy Efficient Job co-Scheduling on HPC Cluster. One of our papers won a best paper award (IEEE SustainCom 2015).
7. [Gabriel Yessin](#), Master Graduate, The George Washington University, currently a contractor at Northrop Grumman [Mentor, Research co-Advisor]. I worked with Gabriel on using Evolutionary Techniques for Design Space Exploration.
8. HamidReza MohammadiBidhendi, Master Student, Arkansas Tech University [Mentor]. Hamid was my TA for three semesters. I advised him on career steps. I have also worked closely with him on teaching labs.

Undergraduate Students

1. Judith Martinez (undergraduate Computer Engineering student from the University of Texas, Rio Grande Valley) and Yair Cabrera (undergraduate Computer Engineering student from Polytechnic University of Puerto Rico). Both are REU (Research Experience for Undergraduates) students who spent summer 2016 at NMSU conducting research on design space exploration for caches using Evolutionary Techniques.

2. Zeyad Saleh, an Undergraduate Engineering Student from McGill University and Intern at HPCL at The George Washington University [Mentor, Research co-Advisor]. Zeyad learned OpenMP, Chapel and C, then, he ported two benchmarks from OpenMP to Chapel. I wrote reference letters for Zeyad, Summer 2015
3. Sanil Rao, Undergraduate Student at the University of Virginia and Intern at HPCL at The George Washington University [Mentor, Research co-Advisor]. Sanil learned OpenMP, Chapel and C then, he ported two benchmarks from OpenMP to Chapel. Sanil also worked on multithreading multiplication algorithms in JAVA, Summer 2015.
4. Adam Core, Undergraduate Student, Arkansas Tech University [Mentor]. Adam is a veteran. He is my undergraduate TA for microprocessors. He excelled in the class when he took it with me and I recruited him to work with me as an undergraduate TA. I also advised him on career steps. I am working closely with him on his TA tasks, Spring 2015.
5. Bridges to Excellence Mentor for Ayers Carson, Karson Mathews, & Jacob McKinney, Undergraduate Engineering Students at Arkansas Tech University 2014 – 2015, and 2015 – 2016.
6. Academic Advisor for 20 undergraduate students per semester at Arkansas Tech University since Fall 2013.
7. Senior Design Mentor for Megan Branch, Kristian Loveless, and Kreg Smead at Arkansas Tech University Spring 2015.

High School Students

1. Hashem Elezebi, High School student and Intern at HPCL at The George Washington University [Mentor, Research co-Advisor]. Hashem learned OpenMP, Chapel and C then, he ported three benchmarks from OpenMP to Chapel. I worked closely with Hashem and I was the one who recruited him to come join us as an intern at HPCL. Hashem attends Stanford University as an undergraduate student. I wrote him recommendation letters for his college applications.

PUBLICATIONS

Refereed Journals

- (J.8) Ahmad Anbar, Olivier Serres, Engin Kayraklioglu, Abdel-Hameed Badawy, and Tarek El-Ghazawi, “Exploiting Hierarchical Locality in Deep Parallel Architectures”, *Appears in ACM Transactions on Architecture and Code Optimization (TACO)*, June 2016.
- (J.7) David K. Newsom, Sardar F. Azari, Olivier Serres, Abdel-Hameed A. Badawy, and Tarek El-Ghazawi, “Thread-Level CPU Power Measurement for High Performance Parallel Systems: Impact Analysis of System Control Parameters on HPC Energy Efficiency”, *Appears in the International Journal of Computing and Digital Systems (IJCDS)*, Vol. 6, March 2016.
- (J.6) Shuai Sun, Abdel-Hameed A. Badawy, Vikram Narayana, Tarek El-Ghazawi, and Volker Sorger, “HyPPI: Hybrid Photonic Plasmonic Interconnects: A Low Latency, Area and Energy Efficient On-chip Interconnects”, *Appears in the IEEE Photonics Journal*, Volume 7, Issue 6, December 2015. [[PDF](#), *ISI Impact Factor* 2.32]
- (J.5) Karl B. Schmitt, Abdel-Hameed A. Badawy, Sabrina Kramer, Katie Marie Hrapczynski, Elise Larsen, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “A Failing Grade for Faculty: Comparing Faculty

Perception of Student Expectations and Reality”, *Appears* in the Journal of Computing Sciences in Colleges, Volume 30, Issue 3, Pages 99 – 107, Consortium for Computing Sciences in Colleges , USA, January 2015. [ACM]

- (J.4) Karl Schmitt, Elise Larsen, Matthew Miller, Abdel-Hameed A. Badawy, Breanne Robertson, Mara Dougherty, Katie Marie Hrapczynski, Andrea Andrew, Artesha Taylor, Alexis Williams, Sabrina Kramer, and Spencer Benson, “A survey tool for assessing student expectations early in a semester”, *Appears* in the Journal of Microbiology & Biology Education (JMBE), *Vol. 14, No. 2.*, December 2013. [PMC, PDF]. This work has been featured at *Faculty Focus*.
- (J.3) Karl B. Schmitt, Abdel-Hameed A. Badawy, Sabrina Kramer, Katie Marie Hrapczynski, Elise Larsen, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “Student Expectations from CS and other STEM Courses: They aren’t Like CS-Majors! or ($CS \neq STEM - CS$)”, *Appears* in the Journal of Computing Sciences in Colleges, Volume 28, Issue 6, Pages 100 – 108, Consortium for Computing Sciences in Colleges , USA, June 2013. [ACM, PDF].
- (J.2) Abdel-Hameed A. Badawy, “Students’ Perception of the Effectiveness of Discussion Boards: What can we get from our students for a freebie point?”, *Appears* in the Science and Information Organization (SAI), International Journal of Advanced Computer Science and Applications(IJACSA), Volume 3, Issue 9, Pages 136 – 144, October, 2012.[arXiv].
- (J.1) Abdel-Hameed A. Badawy, Aneesh Aggrawal, Donald Yeung, and Chau-Wen Tseng, “The Efficacy of Software Prefetching and Locality Optimizations on Future Memory Systems”, *Appears* in The Journal of Instruction-Level Parallelism, Volume 6, Number 7, July 2004. [PDF]

Referred Symposia & Conferences

- (C.15) Shuai Sun, Abdel-Hameed A. Badawy, Vikram Narayana, Tarek El-Ghazawi, and Volker Sorger, “ Bit Flow Density (BFD): An Effective Performance FOM for Optical On-chip Interconnects”, *Appears* in proceedings of the Conference on Lasers and Electro-Optics (CLEO), OSA Technical Digest, San Jose, CA, June 2016, (Optical Society of America, 2016), paper JW2A.135, DOI:[10.1364/CLEO_AT.2016.JW2A.135](https://doi.org/10.1364/CLEO_AT.2016.JW2A.135).
- (C.14) Shuai Sun, Abdel-Hameed A. Badawy, Vikram Narayana, Tarek El-Ghazawi, and Volker Sorger, “ Low latency, area, and energy efficient Hybrid Photonic Plasmonic on-chip Interconnects (HyPPI)”, *Appears* in Proceedings of SPIE 9753, Optical Interconnects XVI, 97530A, San Francisco, CA, March 2016; DOI:[10.1117/12.2217284](https://doi.org/10.1117/12.2217284).
- (C.13) David Newsom, Olivier Serres, Sardar Azari, Abdel-Hameed A. Badawy, and Tarek El-Ghazawi, “Energy Efficient Job Co-Scheduling for High Performance Parallel Clusters”, *Appears* in proceedings of the 5th IEEE International Conference on Sustainable Computing and Communications (SustainCom’15), Chengdu, China, December 2015 [*Best Paper Award*].
- (C.12) David Newsom, Sardar Azari, Olivier Serres, Abdel-Hameed A. Badawy, and Tarek El-Ghazawi, “Measuring the Power and Energy Consumption of Multicore Processors and High Performance Computing Clusters using Big Data Techniques”, *To Appear* in proceedings of the 5th IEEE International Conference on Sustainable Computing and Communications, (SustainCom’15), Chengdu, China, December 2015.

- (C.11) Ahmad Anbar, Olivier Serres, Engin Kayraklioglu, Abdel-Hameed Badawy, and Tarek El-Ghazawi, “PHLAME: Hierarchical Locality Exploitation using the PGAS Model”, *Appears at the 9th IEEE Partitioned Global Address Space Conference (PGAS 2015)*, Washington, DC, September 2015. [[IEEE Version](#)].
- (C.10) Ahmad Anbar, Abdel-Hameed Badawy, Olivier Serres, and Tarek El-Ghazawi, “Where Should The Threads Go? Leveraging Hierarchical Data Locality to Solve the Thread Affinity Dilemma”, *Appears at the 20th IEEE International Conference on Parallel and Distributed Systems (ICPADS 2014)*, Hsinchu, Taiwan, December 2014. [[IEEE](#), [PDF](#)]
- (C.9) Gabriel Yessin, Abdel-Hameed A. Badawy, Vikram Narayana, David Mayhew, and Tarek El-Ghazawi, “CERE: Cache REcommendation Engine: Efficient Evolutionary Cache Hierarchy Design Space Exploration”, *Appears in proceedings of the 11th IEEE International Conference on Embedded Software and Systems (ICCESS 2014)*, Paris, France, August 2014. [[IEEE](#), [PDF](#)]
- (C.8) Abdel-Hameed A. Badawy, Karl B. Schmitt, Sabrina Kramer, Katie Marie Hrapczynski, Elise Larsen, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “Expectations of Computing and other STEM Students: A Comparison for different Class Levels, or $(CSE \neq STEM - CSE)|_{Course Level}$ ”, *Appears at the 43rd Annual IEEE Frontiers in Education (FIE 2013) Conference*, Oklahoma City, Oklahoma, October 2013. [[IEEE](#), [PDF](#)]
- (C.7) Mona Y. Elshinawy, Abdel-Hameed A. Badawy, Wael W. Abdelmageed, and Mohamed F. Chouikha, “Using Gray Level Co-occurrence Matrix Features for Normal Mammogram Detection” Appeared at the Society of Imaging Informatics in Medicine Annual Meeting (SIIM 2011), Washington DC, June 2011. [[HTML](#)]
- (C.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” Appeared at the 8th IEEE International Symposium on Biomedical Imaging (ISBI 2011), Chicago, IL, March 30 - April 2, 2011. [[IEEE](#)].
- (C.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”, Appeared in proceedings of the 8th IEEE EMBS (Engineering in Medicine and Biology Society) and IASTED International Conference on Biomedical Engineering (BioMed 2011), Innsbruck, Austria, February 2011.
- (C.4) Abdel-Hameed A. Badawy, and Michelle Hugue, “Evaluating Discussion Boards on Black-Board as a Collaborative Learning Tool: A Students’ Survey and Reflections”, Appeared in proceedings of the IEEE 2010 International Conference on Education and Management Technology (ICEMT 2010), Cairo, Egypt, November 2 – 4, 2010. [[IEEE](#), [arXiv](#)].
- (C.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”, Appeared in proceedings of IEEE Workshop on Applied Imagery Pattern Recognition (AIPR 2010), Washington DC, October 13 – 15, 2010. [[Best Student Paper Award](#), [IEEE](#)].
- (C.2) Mona Y. Elshinawy, Abdel-Hameed A. Badawy, Wael W. Abdelmageed, and Mohamed F. Chouikha, “Using Local Binary Pattern Features for Normal Mammogram Detection”, Ap-

peared in proceedings of the 23rd IEEE International Symposium on Computer-Based Medical Systems (CBMS 2010), Perth, Australia, October 12 – 15, 2010. [[IEEE](#)].

- (C.1) Abdel-Hameed A. Badawy, Aneesh Aggrawal, Donald Yeung, and Chau-Wen Tseng, “Evaluating the Impact of Memory System Performance on Software Prefetching and Locality Optimizations”, Appeared in proceedings of ACM International Conference on Supercomputing 2001 (ICS 2001), Pages 486 – 500, Sorrento, Italy, June 2001. [[ACM](#), [PDF](#)].

Theses & Dissertations

- (D.2) Abdel-Hameed A. Badawy, “Locality Transformations and Prediction Techniques for Optimizing Multicore Memory Performance”, *Appears in* UMD Theses & Dissertations Electrical & Computer Engineering Theses and Dissertations, August 2013. [[UMD Library](#), [PDF](#)].
- (D.1) Abdel-Hameed A. Badawy, “Evaluating the Impact of Memory System Performance on Software Prefetching and Locality Optimizations”, Technical Reports of the Computer Science Department & UMIACS, CS-TR-4392; UMIACS-TR-2002 – 72, September 2002. [[Master’s Thesis Technical Report](#), [PDF](#)].

Workshops

- (W.1) Mona Y. Elshinawy, Abdel-Hameed A. Badawy, Wael W. Abdelmageed, and Mohamed F. Chouikha, “Screening-out Normal Mammograms using Breast Density Information”, Abstract Appeared in proceedings of the 8th Era of Hope Workshop, Department of Defense (DoD) Breast Cancer Research Program (BCRP), Paper No. *BC004067 – 3386*, Poster *P17 – 7*, Orlando, FL, August 2 – 5, 2011.

Technical Reports

- (R.1) Aneesh Aggrawal, Abdel-Hameed A. Badawy, Donald Yeung, and Chau-Wen Tseng, “Evaluating the Impact of Memory System Performance on Software Prefetching and Locality Optimizations”, Technical Reports of the Computer Science Department & UMIACS, *CS – TR – 4169; UMIACS – TR – 2000 – 57*, August 2000. [[Preliminary Results Technical Report](#), [PDF](#)].

In Revision & Review

- (I.1) Abdel-Hameed A. Badawy, Gabriel Yessin, Vikram Narayana, Tarek El-Ghazawi, and David Mayhew, “Optimizing Thin Client Caches for Mobile Cloud Computing”, *In Minor Revision* Journal Concurrency and Computation: Practice & Experience - A Special Issue from the CloudTech 2015 Conference, John Wiley and Sons Ltd. Chichester, UK, June 2016.
- (I.2) Vikram Narayana, Shuai Sun, Abdel-Hameed A. Badawy, Volker Sorger, Tarek El-Ghazawi, “Hybrid Opto-electric Reconfigurable NoCs (HORN): Exploring Energy and Performance Optimizations for Electrical Networks Augmented with Reconfigurable Nanophotonic Channels”, *In Review*.
- (I.3) Nafiul A. Siddique, Jeanine Cook, Abdel-Hameed A. Badawy, and David Resnick, “Local Memory Store (LMStr): The Case for Hardware Controlled Scratchpad Memory for General Purpose Processors”, *In Review* IEEE IPCCC, 2016.
- (I.4) Mohammd A. Qayum, Jeanine Cook, and Abdel-Hameed A. Badawy, “Adaptable Hybrid Transactional Memory (AdHyTM): A Scalability Study on Large Parallel Graphs”, *In Review*

IEEE IPCCC, 2016.

In Submission

1. Nafiul A. Siddique, Patricia Gruble, Abdel-Hameed A. Badawy, and Jeanine Cook “Cache Utilization as a Metric for Locality: A Case study on the Montevo Suite”, *In Review* PMBS 2016 in conjunction with SC 2016.
2. Mohammad A. Qayum, Jeanine Cook, and Abdel-Hameed A. Badawy, “Transactional Memory as the Synchronization Policy for Big Data Graphs”, *In Submission* Cluster Computing Special Issue, 2016.
3. Abdel-Hameed A. Badawy, Meng-Ju Wu, and Donald Yeung, “Guiding Locality Optimizations for Graph Computations via Reuse Distance Analysis”, *in submission* to the IEEE Computer Architecture Letters, 2016.
4. Abdel-Hameed A. Badawy, Meng-Ju Wu, and Donald Yeung, “Optimization Selection via Reuse Distance Profiles”, *in submission* to the 34th IEEE – ISPASS 2017.
5. Abdel-Hameed A. Badawy, Meng-Ju Wu, and Donald Yeung, “Prediction and Optimization via Reuse Distance”, *in submission* to the ACM Transactions on Architecture and Code Optimization, 2016.
6. David Newsom, Olivier Serres, Sardar Azari, Abdel-Hameed A. Badawy, and Tarek El-Ghazawi, “Energy Driven Job co-Scheduling in HPC Clusters”, *In Submission* to IEEE Transaction on Sustainable Computing, 2016.

Selected TALKS & POSTERS

1. Ahmad Anbar, Olivier Serres, Engin Kayraklioglu, Abdel-Hameed Badawy, and Tarek El-Ghazawi, “PHLAME: Hierarchical Locality Exploitation using the PGAS Model”, *talk*¹ presented at the 9th IEEE Partitioned Global Address Space Conference (PGAS 2015), Washington, DC, September 2015.
2. Abdel-Hameed Badawy, “Locality in the Exascale era and beyond”, *talk* presented at the IEEE Arkansas River Valley Section Annual Meeting, Russellville, AR, April 2015.
3. Ahmad Anbar, Abdel-Hameed Badawy, Olivier Serres, and Tarek El-Ghazawi, “Where Should The Threads Go? Leveraging Hierarchical Data Locality to Solve the Thread Affinity Dilemma”, *talk*² presented at the 20th IEEE International Conference on Parallel and Distributed Systems (ICPADS 2014), Hsinchu, Taiwan, December 2014.
4. Gabriel Yessin, Abdel-Hameed A. Badawy, Vikram Narayana, David Mayhew, and Tarek El-Ghazawi, “CERE: Cache REcommendation Engine: Efficient Evolutionary Cache Hierarchy Design Space Exploration”, *talk*³ presented at the 11th IEEE International Conference on Embedded Software and Systems (ICCESS 2014), Paris, France, August 2014.
5. Abdel-Hameed A. Badawy, Elise Larsen, Karl B. Schmitt, Sabrina Kramer, Katie Marie Hrapczynski, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “The Student-Faculty Chasm: Looking

¹The student presented but I worked with him on the presentation

²I worked with the student on the Slides but Prof. El-Ghazawi was the presenter

³I created the talk but was not the presenter

- at where student and faculty expectations meet and change”, **Invited Talk** presented at the [Pennsylvania State System of Higher Education \(PASSHE\) Distance Education Virtual Conference](#), February 2014.
6. Abdel-Hameed A. Badawy, Karl B. Schmitt, Sabrina Kramer, Katie Marie Hrapczynski, Elise Larsen, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “Expectations of Computing and other STEM Students: A Comparison for different Class Levels, or (CSE \neq STEM - CSE)|*Course Level*”, **talk** presented at the 43rd Annual IEEE Frontiers in Education (FIE 2013) Conference to be held in Oklahoma City, Oklahoma, October 2013.
 7. Abdel-Hameed A. Badawy, Elise Larsen, Karl B. Schmitt, Sabrina Kramer, Katie Marie Hrapczynski, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “The Student-Faculty Chasm: Looking at where student and faculty expectations meet and change”, **talk** presented at the Annual Lilly-DC Conference on College and University Teaching and Learning, Washington, DC, June 2013. [[Presentation Slides](#)].
 8. Abdel-Hameed A. Badawy, Karl B. Schmitt, Sabrina Kramer, Katie Marie Hrapczynski, Elise Larsen, Andrea Andrew, Mara Dougherty, Matthew Miller, Artesha Taylor, Breanne Robertson, Alexis Williams, and Spencer Benson, “On the Expectations of Computer Science and other STEM Students”, **Poster** presented at the Annual Innovation in Teaching and Learning (ITL) Conference, University of Maryland, College Park, April 2013. [[Abstract](#), [Presentation Slides](#)].
 9. Abdel-Hameed Badawy, and Karl Schmitt, “Student Expectations”, **talk** presented at the University of Maryland Graduate Teaching Assistants Orientation, College Park, MD, August 2012.
 10. Abdel-Hameed Badawy, Katie Hrapczynski, Mara Dougherty, Karl Schmitt, Breanne Robertson, Artesha Taylor, Alexis Williams, Sabrina Kramer, and Spencer Benson, “What Do They Expect? Assessment of Student Expectations in the Classroom and Applications for Faculty”, **talk** presented at the Annual Lilly-DC Conference on College and University Teaching and Learning, Washington, DC, June 2012.
 11. Abdel-Hameed Badawy, Karl Schmitt, Breanne Robertson, Mara Dougherty, Katie Marie Hrapczynski, Elise Larsen, Andrea Andrew, Matthew Miller, Artesha Taylor, Alexis Williams, Sabrina Kramer, and Spencer Benson, “Building a Tool for pre-assessing Student Expectations”, **poster** presented at the Graduate Student Government, Graduate Research Interaction Day (GRID 2012), April 2012. [**Best Student Poster Award**].
 12. Abdel-Hameed A. Badawy, “Blackboard: Online Learning for the Facebook Generation”, **talk** presented at Graduate Teaching Assistants mandatory training workshop, Electrical and Computer Engineering Department, College Park, MD, October 2010 and December 2011.
 13. Abdel-Hameed A. Badawy, “Discussion Boards on Blackboard as a Collaborative Learning Tool: A Survey and Students’ Reflections: What would the students do for a freebie point?”, **talk** presented at the 31st Annual International Lilly Conference on College Teaching, Oxford, OH, November 2011.

14. Mona Y. Elshinawy, Abdel-Hameed A. Badawy, Wael W. Abdelmageed, and Mohamed F. Chouikha, “Screening-out Normal Mammograms using Breast Density Information”, *poster* presented at the 8th Era of Hope Workshop, Department of Defense (DoD) Breast Cancer Research Program (BCRP), Orlando, FL, August 2011.
15. Abdel-Hameed A. Badawy, “What can we get from our students for a freebie point?”, *poster* presented at the Annual Lilly-DC Conference on College and University Teaching and Learning, Washington, DC, June 2011.
16. 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”, *poster* presented at the 8th IEEE International Symposium on Biomedical Imaging (ISBI 2011), Chicago, IL, April 2011.
17. 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”, *poster* presented at the IEEE Workshop on Applied Imagery Pattern Recognition (AIPR 2010), Washington, DC, October 2010. [**Best Student Paper Award**].
18. Abdel-Hameed A. Badawy, and Michelle Hugue, “The Effectiveness of Blackboard and Discussion Boards in Junior Computer Science/Engineering Class: Survey and Students’ Reflections”, *Appears* at the 17th International Conference on Learning, Hong Kong Institute of Education, Hong Kong, Paper # L10P1185, July 6 – 9, 2010. [Abstract](#), [PowerPoint Slides](#), Youtube video [Part I](#) , [Part II](#)
19. Meng-Ju Wu, Abdel-Hameed A. Badawy (Presenter), Inseok Choi, Xu Yang, and Donald Yeung, “Scalability of Multicore Processors”, *poster* presented at the ECE Research Review Day, October 2009.
20. Abdel-Hameed A. Badawy, “Prefetch-aware Memory-controllers”, *poster* presented at the Graduate Research Interaction Day (GRID 2004), April 2004. [**Award of Excellence**].
21. Abdel-Hameed A. Badawy, and Donald Yeung, “Studying the effects of Software Prefetching and Locality Optimizations on System Energy and Power”, *poster* presented at Research Review Day, University of Maryland, College Park, March 2003.
22. Abdel-Hameed A. Badawy, “Evaluating the Impact of Memory System Performance on Software Prefetching and Locality Optimizations”, *talk* presented at the ACM’s International Conference on Supercomputing (ICS 2001), Sorrento, Italy, June 2001.

HONORS, AWARDS, INVITATIONS, & GRANTS

1. **Best Paper Award** for “Energy Efficient Job Co-Scheduling for High-Performance Parallel Computing Clusters”, at the 5th IEEE International Conference on Sustainable Computing and Communications (SustainCom’15), Chengdu, China, December 2015.
2. Invited to participate at the [OSA Optical Computing Incubator](#), Optical Society of America, **December 2015**
3. **Outstanding Service Award** for role as the [Publication Chair of the IEEE 9th PGAS’2015 conference](#), **September 2015**
4. Listed in Who’s Who in America 68th, 69th, & 70th Editions.

5. Listed in Who's Who in Engineering Education since 2014, [Academic Keys](#)
6. **Appointed Member of CIRTL's task-force** established at UMD for the [Center for Integration of Research, Teaching and Learning](#) (CIRTL) at UMD. This task-force is established after UMD had participated in a 25 million dollar grant submitted to the National Science Foundation (NSF).
7. **Best Student Poster Award** and a **Grant of \$500** in the University of Maryland, Graduate Research Interaction Day (GRID 2012) (An interdisciplinary research competition attended by more than 500 presenters) for the poster "Building a Tool for pre-assessing Student Expectations", April 2012.
8. **CTE-Lilly Graduate Fellow**, a [cohort of nine graduate students](#) to do a relevant teaching and learning study to the University of Maryland and its students. Nine graduate students only are selected for this fellowship for the 2011 – 2012. Each fellow got a stipend of 1000 and 500 conference travel grant. A summary of the developed project is available [here](#).
9. **NIH-funded Conference Travel Grant** of \$300 to attend the International Symposium on Biomedical Imaging (ISBI 2011), March 2011.
10. **University of Maryland Graduate School Goldhaber Conference Travel Grant** of \$400 to present a paper at the International Symposium on Biomedical Imaging (ISBI 2011), March 2011.
11. **Best Student Paper Award** and a **Grant of \$200** for the paper titled: "One-Class Support Vector Machines vs. Two-class Support Vector Machines for Normal Mammogram Detection", presented at the IEEE Workshop on Applied Imagery Pattern Recognition (AIPR 2010), Washington, DC, October 2010.
12. **Teaching Assistants Training and Development (TATD) Fellow** at the ECE Dept., University of Maryland, for the 2010 – 2011 & 2011 – 2012 academic years including 2X250 conference travel grants.
13. **CTE Lilly-DC Conference Grants** from the Center for Teaching Excellence (CTE) to attend the Lilly Conference held in Bethesda, MD, 2010, 2011, 2012, 2013.
14. **Noyce Scholarship** to attend the 2010 National Center for Science & Civic Engagement (NCSCE) Symposium and Capitol Hill poster Session held in Washington DC and the University of Maryland, College Park, April 2010. [*Only five scholarships were awarded*]
15. **CTE Lilly-East Conference Grants** from UMD's Center for Teaching Excellence (CTE) to attend the Lilly Conference held at the University of Delaware, 2008 & 2009.
16. **Award of Excellence** and a **Grant of \$200** in the University of Maryland, [Graduate Research Interaction Day](#) (GRID 2004) (An interdisciplinary research competition attended by more than 200 presenters) for the poster titled: "Prefetch-aware Memory Controllers", April 2004.
17. **Egyptian Cabinet Scholarship** for a training program at the [Information Technology Institute](#) (ITI), Giza, Egypt, August 1996 - July 1997.
18. **Distinguished Student Excellence Award** in every year of the the B.Sc. Study, 1991 – 1996.

SERVICE TO THE PROFESSION

Grant(s) Review

- National Science Foundation (NSF) [2016 Graduate Research Fellowship Program \(GRFP\)](#), January 2016. [**Panelist**]

Editorial Board(s)

- Guest Editor to a special issue on Optical Computing to appear in the Nanophotonics Journal, June 2016.
- Editorial Board Member of the International Journal of Computing and Digital Systems (IJCDS), 2015.
- Guest Associate editor for the Journal of Learning, *Aug.* 2010.

Conference Organizing Committee(s)

- Publications Chair, The 9th IEEE Partitioned Global Address Space (PGAS 2015), Washington, DC, *Sept.* 2015.
- Session Chair at the [IEEE 43rd Annual IEEE Frontiers in Education Conference \(FIE'13\)](#), Oklahoma City, OK, *Oct.* 2013.
- Core Committee member for the Science and Information (SAI 2013) Conference London, UK 2013.
- Poster Session Judge, Annual Lilly-DC Conference on College & University Teaching, Bethesda, MD, *June* 2012.
- Session Convener, the 6th Annual Innovation in Teaching and Learning (ITL 2012) Conference, University of Maryland, College Park, MD, *April* 2012.

Conference Technical Program Committee Member

- IEEE 7th Annual Computing and Communication Workshop and Conference (IEEE-CCWC 2017)
- International Conference on Electrical, Electronic, Communication and Control Engineering (ICEECC 2016)
- IEEE Industrial Electronics and Applications Conference (IEACon 2016)
- International conference on Architectural Research & Computer-Aided Design (ICAR-CAD 2017)
- IEEE International Symposium on Signal Processing and Information Technology, (IS-SPIT 2015, 2016)
- International Conference on Computer Applications & Technology (ICCAT 2015, 2016)
- [The International Symposium on Computer Vision and the Internet](#)(VisionNet 2015, 2016)
- International Workshop on the Design and Performance of Networks on Chip (DPNoC 2015, 2016), [FNC 2015](#), FNC 2016.

- Shadow Program Committee member and Reviewer for The European Conference on Computer Systems (EuroSys15), Bordeaux, France.
- International Conference on Computer Vision and Image Analysis applications (ICCVIA 2015, 2016)
- International Biometrics & Smart Government Summit (IBMSGs 2015), January 2015, Sousse, Tunisia.
- IEEE Symposium on Industrial Electronics & Applications (ISIEA 2014), October 2014, Kota Kinabalu, Sabah, Malaysia.
- International Symposium on Web of Things and Big Data: [(WoTBD 2014), [WoTBD 2015](#), (WoTBD 2016)].
- International Workshop on Mobile Applications: [(MobiApps 2014, 2015, 2016)] in conjunction with [MobiWIS 2014](#), [MobiWIS 2015](#) and [MobiWIS 2016](#).
- IEEE Technically co-sponsored [Science and Information \(SAI\) Conference](#) 2013, 2014.
- [International Conference on Electronic Publishing and Information Technology \(ICEPIT 2014\)](#), University of Bahrain, Bahrain, April 2014.
- IEEE Symposium on Computer Applications and Industrial Electronics (ISCAIE 2014), Penang, Malaysia, *April*2014.
- IEEE Frontiers in Education Conference: [[2013](#), [2014](#), [2015](#), [2016](#)]
- [International Conference on Software Technology and Engineering \(ICSTE\)](#) 2012, 2013.
- 3rd International Conference on Mechanical and Electrical Technology (ICMET 2011), China, August 2011.

Journal/Book Reviewer

- IEEE Computer, Special issue on Energy Efficient Computing, May 2016.
- The International Journal of Computing and Digital Systems (IJCDS), Dec 2015.
- [Elsevier Journal of Parallel and Distributed Computing \(JPDC\)](#) 2015
- [Elsevier Journal of King Saud University: Engineering Sciences](#) 2015
- [International Journal of Computing and Digital Systems](#) 2013 – 2015
- Invited to review for WSEAS (World Scientific and Engineering Academy and Society) Conferences and Journals, 2015
- International Journal of Biomedical Science and Engineering (IJBSE), Science Publishing Group (SciencePG), 2014, 2015
- Awards Committee member for IJACSA, nominating Papers for the Best Paper Award, since 2014.
- [World Journal of Engineering and Physical Sciences \(WJEPS\)](#)
- [NED University Journal of Research](#) since 2012.
- Books published by Common Ground Publishing since 2012

- [International Journal of New Computer Architectures and their Applications \(IJN-CAA\)](#) since 2012
- [International Journal of Advanced Computer Science and Applications \(IJACSA\)](#) since 2012
- [International Journal of Computer and Electrical Engineering \(IJCEE\)](#) since 2011
- [Journal of Digital Imaging \(JDI\) Society of Imaging Informatics in Medicine \(SIIM\)](#) since 2010.

Conference Reviewer

- The International Conference on Electrical, Electronic, Communication and Control Engineering (ICEECC2016), Malaysia
- 15th International Conference on Applications of Computer Engineering (ACE '16), Mallorca, Spain, August 2016.
- ACM Special Interest Group Computer Science Education (SIGCSE) 2013 – 2016.
- IEEE Symposium on Industrial Electronics & Applications (ISIEA 2014), Kota Kinabalu, Sabah, Malaysia, October 2014.
- [IEEE Technically Co-Sponsored Science and Information \(SAI 2014\) Conference](#) 2014.
- [Consortium of Computer Science in Colleges \(CCSC\)](#) regional conferences:
[South-West](#) 2013, 2014 [South-Central](#) 2013 [North-East \(CCSC-NE\)](#) 2013
- 3rd International Conference on Machine Learning and Computing (ICMLC 2011), Singapore, February 2011.

MEMBERSHIPS

- Senior Member IEEE since September 2015.
- Professional ACM member since 2014.
- Dean's Member of the ASEE since Fall 2015.
- Vice President of the IEEE Arkansas River Valley Section, Spring 2014 – Spring 2015, Spring 2016 –
- Student Activities Chair of the IEEE Arkansas River Valley Section, Spring 2015 – Fall 2016
- Senior Member, [International Association of Computer Science and Information Technology \(IACSIT\)](#), June 2013.
- Member, [Science and Engineering Institute \(SCIEI\)](#), November 2011.
- Member, [Society of Digital Information and Wireless Communications \(SDIWC\)](#), October 2012.
- IEEE, IEEE Computer Society, ACM since 1998.

TRAINING & CERTIFICATION PROGRAMS

- [eTech Online Certification Program](#): A certification program to prepare Faculty to offer online courses. **November 2013**
- [Institutional Review Board, Collaborative Institutional Training Initiative \(CITI\)](#). Basic/Refresher Curriculum for Investigators and staff involved primarily in Social & Behavioral Research with human subjects. **January 2012**