

Curriculum Vitae

AHMED AMER

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EDUCATION

- Ph.D. 2002 University of California, Santa Cruz, Computer Science
Dissertation: Predictive Data Grouping Using Successor Prediction
Advisor: Prof. Darrell D. E. Long
- M.S. 1997 American University in Cairo, Computer Science
Thesis: High Performance Distributed Storage Architectures
Advisor: Prof. Amr El-Kadi
- B.S. 1994 American University in Cairo, Computer Science
Summa Cum Laude
Project: Design and Implementation of a Micro-Kernel O.S.

PROFESSIONAL EXPERIENCE

- 2002– Assistant Professor, Department of Computer Science, University of Pittsburgh, Pittsburgh, PA.
- 2008– Visiting Research Faculty, Department of Computer Science, University of California, Santa Cruz, CA.
- 1997–02 Graduate Researcher, Department of Computer Science, University of California, Santa Cruz.
- 2002 Co-Instructor, “CS 221 Graduate Operating Systems,” University of California, Santa Cruz.
- 1998–01 Summer Research Intern, IBM Almaden Research Center, Almaden, California.
- 1997–02 IT Infrastructure Specialist, Shell Egypt, N.V.
- 1997–98 Teaching Assistant, Departments of Computer Science & Engineering, University of California, Santa Cruz.
- 1994–97 Exploration & Production Technical Systems Support Specialist, Shell Egypt, N.V.
- 1994–97 Teaching Assistant, Department of Computer Science, The American University in Cairo.
- 1994 Information Analyst, Academic Computing Services, The American University in Cairo.
- 1991–92 Undergraduate Teaching Assistant, Scientific Thinking, The American University in Cairo.

HONORS & AWARDS

- 2007/08 University of Pittsburgh Innovation in Education Award.
- 2005/06 Computer Science Department Teaching Award, University of Pittsburgh.
- 1999/00 USENIX Fellowship.
- 1997/98 University of California Regents Fellowship.
- 1994 President’s Cup, The American University in Cairo.
- 1994 Mohamed M. El-Beleidy Academic Achievement Award.
- 1993,1994 Academic Honour Awards for Outstanding Achievement, Computer Science Department, The American University in Cairo.
- 1992/93 Presidential Scholarship, The American University in Cairo.
- 1991/92, 1993/94 Academic Merit Scholarships, The American University in Cairo.

PUBLICATIONS

Journal Papers

1. David Essary, Ahmed Amer. “Predictive Data Grouping: Defining the bounds of energy and latency reduction through predictive data grouping and replication,” *ACM Transactions on Storage*, 4(1): pp.1-23, May 2008.
2. Ganesh Santhanakrishnan, Ahmed Amer, Panos K. Chrysanthis. “Self-Tuning Caching: The Universal Caching Algorithm,” *Software Practice and Experience (SPE)*, 36(11-12): pp.1179-1188, September-October 2006.
3. Alex K. Jones, Jiang Zheng, Ahmed Amer. “Entropy Based Evaluation of Communication Predictability in Parallel Applications,” *IEICE Transactions on Information & Systems*, E89-D(2): pp.469-478, February 2006.
4. Qinglan Li, Jonathan Beaver, Ahmed Amer, Panos K. Chrysanthis, Alexandros Labrinidis, Ganesh Santhanakrishnan. “Multi-Criteria Routing in Wireless Sensor-Based Pervasive Environments,” *Journal of Pervasive Computing and Communications (JPCC)*, 1(4): pp.313-326, December 2005.
5. Daniel Fiedler, Kristen Walcott, Thomas Richardson, Gregory M. Kapfhammer, Ahmed Amer, Panos K. Chrysanthis. “Towards the measurement of tuple space performance,” *SIGMETRICS Performance Evaluation Review*, 33(3): ACM, pp.51-62, December 2005. (Journal version of paper at the First ACM SIGMETRICS Workshop on Large Scale Network Inference (LSNI 2005))
6. Ismail Ari, Ahmed Amer, Robert Gramacy, Ethan L. Miller, Scott A. Brandt, Darrell D. E. Long. “ACME: adaptive caching using multiple experts,” *Distributed Data & Structures 4 (Proceedings in Informatics 14)*, W. Litwin and G. Lvy, Eds. Paris, France: Carleton Scientific, pp.143–158, March 2002.

Refereed Conference Papers

1. Ahmed Amer, Jehan-François Pâris, Darrell D. E. Long and Thomas Schwarz, “Progressive Parity-Based Hardening of Data Stores,” *Proceedings of the 27th International Performance of Computers and Communication Conference (IPCCC 2008)*, Austin, TX, pp.34-42, December 2008.
2. Jehan-François Pâris, Thomas Schwarz, Darrell D. E. Long and Ahmed Amer, “When MTTLs Are Not Good Enough: Providing Better Estimates of Disk Array Reliability,” *Proceedings of the 7th International Information and Telecommunication Technologies Symposium (I2TS 2008)*, Foz do Iguau, PA, Brazil, pp.140-145, December 2008.
3. Ahmed Amer, Darrell D. E. Long, Jehan-François Pâris and Thomas Schwarz, “Increased Reliability with SSPiRAL Data Layouts,” *Proceedings of the 16th International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems (MASCOTS 2008)*, Baltimore, MD, September 2008.
4. Jeffrey P. Rybczynski, Darrell D. E. Long, Ahmed Amer, “Adapting Predictions and Workloads for Power Management,” *Proceedings of the 14th IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunications Systems (MASCOTS 2006)*, Monterey, CA, USA: IEEE, pp.3–12, September 2006.
5. Takashi Okumura, Ahmed Amer, Daniel Mossé, “Prioritizing Write Acknowledgment inside Network File-servers,” *Proceedings of the 48th Annual Global Telecommunications Conference (GLOBECOM 2005)*, St. Louis, MI, USA: IEEE, December 2005.
6. Ganesh Santhanakrishnan, Qinglan Li, Jonathan Beaver, Panos Chrysanthis, Ahmed Amer, Alexandros Labrinidis. “Multi-criteria Routing in pervasive environment with sensors.” *Proceedings of the IEEE International Conference on Pervasive Services (ICPS 2005)*, Santorini, Greece: IEEE, pp.7–16, July 2005.
7. James Larkby-Lahet, Ganesh Santhanakrishnan, Ahmed Amer and Panos Chrysanthis. “STEP: Self-Tuning Energy-safe Predictors,” *Proceedings of the International Conference on Mobile Data Management (MDM 2005)*, Ayia Napa, Cyprus: ACM, pp.125–133, May 2005.

8. Matthew P. Craven and Ahmed Amer. "Predictive Reduction of Power and Latency (PuRPLe)," *Proceedings of the Twenty Second IEEE/Thirteenth NASA Goddard Conference on Mass Storage Systems and Technologies (MSST 2005)*, Monterey, CA, pp.237–244, April 2005.
9. Karl S. Brandt, Darrell D. E. Long, and Ahmed Amer "Predicting When Not To Predict," *Proceedings of 12th Annual IEEE/ACM International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS 2004)*, Volendam, The Netherlands, pp.419–426, October 2004.
10. Purvi Shah, Jehan-François Pâris, Ahmed Amer, and Darrell D. E. Long, "Identifying Stable File Access Patterns" *Proceedings of the Twelfth NASA Goddard/Twenty First IEEE Conference on Mass Storage Systems and Technologies (MSST 2004)*, College Park, MD: IEEE, pp.230–240, April 2004.
11. Ganesh Santhanakrishnan, Ahmed Amer, Panos Chrysanthis and Dan Li. "GD-GhOST: A Goal-Oriented Self-Tuning caching algorithm," *Proceedings of the 19th ACM Symposium on Applied Computing (SAC 2004)*, Nicosia, Cyprus: ACM, pp.1141–1145, March 2004.
12. Gary A. S. Whittle, Jehan-François Pâris, Ahmed Amer, Darrell D. E. Long, and Randal C. Burns. "Using Multiple Predictors to Improve the Accuracy of File Access Predictions," *Proceedings of the Twentieth IEEE/Eleventh NASA Goddard Conference on Mass Storage Systems and Technologies (MSST 2003)*, San Diego, CA, April 2003.
13. Ahmed Amer, Alison Luo, Newton Der, Darrell D. E. Long, and Alex Pang. "Visualizing Cache Effects on I/O Workload Predictability," *Proceedings of the International Performance Conference on Computers and Communication (IPCCC 2003)*, Phoenix, Arizona: IEEE, April 2003.
14. Ahmed Amer, Darrell D. E. Long, and Randal C. Burns. "Group-Based Management of Distributed File Caches," *The International Conference on Distributed Computing Systems (ICDCS 2002)*, Vienna, Austria: IEEE, July 2002. (acceptance rate: 18%)
15. Alison Luo, Ahmed Amer, Scott Speidel, Darrell D. E. Long, Alex Pang. "Visualizing I/O Predictability," *First International Symposium on 3D Data Processing, Visualization, and Transmission (3DPVT)*, Padova, Italy: IEEE, 2002.
16. Ahmed Amer, Darrell D. E. Long, Jehan-François Pâris, and Randal C. Burns. "File Access Prediction with Adjustable Accuracy," *Proceedings of the International Performance Conference on Computers and Communication (IPCCC 2002)*, Phoenix, Arizona: IEEE, April 2002.
17. Alison Luo, Eric P. Lam, and Ahmed Amer. "Texture Classification using Wavelets and Vector Quantization," *Proceedings of the International Symposium on Signal Processing and Information Technology*, Cairo, Egypt: IEEE, December 2001.
18. Ahmed Amer and Darrell D. E. Long. "Aggregating Caches: A Mechanism for Implicit File Prefetching," *Proceedings of the Ninth International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS 2001)*, Cincinnati, Ohio: IEEE, pp.293–301, August 2001.
19. Ahmed Amer and Darrell D. E. Long. "Noah: Low-cost File Access Prediction Through Pairs," *Proceedings of the International Performance Conference on Computers and Communication (IPCCC 2001)*, Phoenix, Arizona: IEEE, pp.27–33, April 2001.

Refereed Workshop Papers

1. Ahmed Amer, Jehan-François Pâris, Thomas Schwarz, Vincent Ciotola, James Larkby-Lahet, "Outshining Mirrors: MTTDL of Fixed-Order SSPiRAL Layouts," *Proceedings of the International Workshop on Storage Network Architecture and Parallel I/Os (SNAPI'07)*, San Diego, CA, September 2007.
2. Daniel Mossé, Louise Comfort, Ahmed Amer, José Carlos Brustoloni, Panos K. Chrysanthis, Milos Hauskrecht, Alexandros Labrinidis, Rami G. Melhem, Kirk Pruhs. "Secure-CITI Critical Information-Technology Infrastructure," 7th Annual International Conference on Digital Government Research (DG.O 2006), San Diego, CA, pp.253–254, May 2006.

3. Jeffrey P. Rybczynski, Darrell D. E. Long, Ahmed Amer. "Expecting the unexpected: adaptation for predictive energy conservation," *Proceedings of the 2005 ACM workshop on Storage security and survivability (StorageSS 2005)*, Fairfax, VA: ACM, pp.130–134, November 2005.
4. Ganesh Santhanakrishnan, Ahmed Amer and Panos K. Chrysanthis. "Towards Universal Mobile Caching," *Proceedings of the 4th ACM International Workshop on Data Engineering for Wireless and Mobile Access (MobiDE 2005)* (held in conjunction with the ACM SIGMOD 2005), Baltimore, MD, USA: ACM, pp.73–80, June 2005.
5. Jehan-François Pâris, Ahmed Amer, and Darrell D. E. Long. "A Stochastic Approach to File Access Prediction," *Proceedings of the International Workshop on Storage Network Architecture and Parallel I/Os (SNAPI'03)*, New Orleans, LA, September 2003.
6. Ismail Ari, Ahmed Amer, Ethan L. Miller, Scott Brandt, and Darrell D. E. Long. "Who is more adaptive? ACME: Autonomous Caching using Multiple Experts," *Workshop on Distributed Data and Structures (WDAS 2002)*, Paris, France: Carleton Scientific, March 2002.
7. Ahmed Amer and Darrell D. E. Long. "Adverse Filtering Effects and the Resilience of Aggregating Caches," *Proceedings of the Workshop on Caching, Coherence and Consistency (WC3 2001)*, Sorrento, Italy: ACM, June 2001.
8. Ahmed Amer and Darrell D. E. Long. "Dynamic Relationships and the Persistence of Pairings," *Proceedings of the International Workshop on Wireless Networks and Mobile Computing (WNMC 2001)*, Mesa, Arizona: IEEE, pp.502–507, April 2001.
9. Ahmed Amer, Ghada N. Aly, and Ahmed M. Sameh. "Genetic Algorithms and Scheduling: The Effectiveness of a Plain-Vanilla SGA," *Proceedings of TAINN'96*. Istanbul, Turkey, pp.S7–S19, June 1996.

Miscellanea

1. Ganesh Santhanakrishnan, Ahmed Amer and Panos K. Chrysanthis. "A Goal-Oriented Self-Tuning caching algorithm" *Proceedings of the 23'rd IEEE International Performance Computing and Communications Conference (IPCCC 2004)* Phoenix, AZ: IEEE, pp.311–312, April 2004.
2. Alison Luo, Ahmed Amer, Newton Der, Darrell D. E. Long, and Alex Pang. "Visualizing File System Predictability," *Works In Progress at IEEE Visualization 2001*, San Diego, CA, USA: IEEE, October 2001.
3. Ahmed Amer, "Mobile Hoarding and Automated Grouping," *login: The USENIX Magazine*, April 2001, vol. 26, no. 2, pp.81–83.
4. Ahmed Amer and Amr El-Kadi, "Beating Bottlenecks in the Design of Distributed File Systems," *login: The USENIX Magazine*, December 1996, vol. 21, no. 6, pp.14–23.

GRANTS & FUNDING

- 2007–09 *CSR-PDOS: Hardening Distributed Data Stores for Disaster Recovery*, National Science Foundation, \$149,999 (PI, awarded).
- 2007–08 *The Virtual Systems Laboratory*, University of Pittsburgh Innovation in Education Grant, \$15,073 (PI, awarded).
- 2003–08 *Secure CITI: A Secure Critical Information Technology Infrastructure for Disaster Management*, National Science Foundation, \$2,800,318 (senior personnel, awarded).

STUDENT ADVISING

Currently advising two PhD students, one MS student, and mentoring a group of undergraduate students from varied backgrounds developing a new operating system kernel as an educational platform and research tool.

Graduated six M.S. students, and served on three PhD committees within the University of Pittsburgh. I have also served as advisor to three Computer Engineering undergraduate senior design projects, and have served as an external member on two M.S. thesis committees (Karl Brandt and Jeffrey P. Rybczynski), and one PhD qualifying committee (Lawrence You) at the University of California, Santa Cruz (as external member).

SELECTED PROFESSIONAL ACTIVITIES & SERVICE

Invited Lectures and Talks

- November 5, 2008 “The Virtual Systems Laboratory,” University of Pittsburgh Teaching Excellence Fair
Selected By: Advisory Council on Instructional Excellence
- April 18, 2007 “Reliable Scalable Storage,” Pittsburgh Supercomputing Center.
Hosted By: Ralph Roskies
- November 30, 2006 “Prediction for Power and Cache,” CMU, SDI/LCS Lecture Series.
Hosted By: Garth Gibson and Greg Ganger
- June 13, 2006 “Predictive Disk Power Management,” IBM Storage Systems Strategy Meeting.
Hosted By: IBM Research (Almaden)
- March 17, 2005 “Prescience in Retrospect,” CMU, SDI/LCS Lecture Series.
Hosted By: Greg Ganger
- April 30, 2004 “Automating System and Device Management,” University of Pittsburgh.
Hosted By: S-CITI Mini-Symposium
- September 12, 2003 “Optimizing Storage: Beyond Speed-ups,” Guest talk in Santa Cruz, CA.
Hosted By: The UCSC Storage Systems Research Center
- March 19, 2003 “Adaptive Cache Replacement Policies,” Carnegie-Mellon University.
Hosted By: Joint Pitt/CMU DB Seminar
- November 1998 “RAID Storage Architectures,” University of California, Santa Cruz.
Host: Dr. Richard Hughey

Program Committee Membership

- 2009 Tenth International Conference on Web Information Systems Engineering (WISE 2009)
- 2009 International Conference on Networking, Architecture, and Storage (NAS 2009) – Vice-Chair, Storage Research Track
- 2008 Twenty-Seventh IEEE International Performance Computing and Communications Conference (IPCCC 2008)
- 2008 International Conference on Networking, Architecture, and Storage (NAS 2008) – Vice-Chair, Storage Research Track
- 2008 Nineteenth International Conference on Mobile Data Management (MDM 2008)
- 2007 Twenty-Fourth IEEE/Fifteenth NASA Goddard Conference on Mass Storage Systems and Technologies (MSST 2007) – Publications Chair
- 2007 Fourth International Workshop on Storage Network Architecture and Parallel I/Os (SNAPI 2007)
- 2007 Sixth International ACM Workshop on Data Engineering for Wireless and Mobile Access (MoBiDE 2007) – Treasurer
- 2007 Twenty-Sixth IEEE International Performance Computing and Communications Conference (IPCCC 2007)

- 2006 Seventh Workshop on Distributed Data and Structures (WDAS 2006)
- 2006 Twenty-Third IEEE/Fourteenth NASA Goddard Conference on Mass Storage Systems and Technologies (MSST 2006)
- 2006 International Workshop on Software Support for Portable Storage (IWSSPS 2006)
- 2006 Twenty-Fifth IEEE International Performance Computing and Communications Conference (IPCCC 2006)
- 2005 International Workshop on Software Support for Portable Storage (IWSSPS 2005)
- 2005 Twenty-Second IEEE/Thirteenth NASA Goddard Conference on Mass Storage Systems and Technologies (MSST 2005)
- 2005 Twenty-Fourth IEEE International Conference on Performance, Computing, and Communications (IPCCC 2005).
- 2004 International Workshop on Storage Network Architecture and Parallel I/Os (SNAPI 2004)
- 2004 Twenty-First IEEE/Twelfth NASA Goddard Conference on Mass Storage Systems and Technologies (MSST2004)
- 2004 Twenty-Third IEEE International Conference on Performance, Computing, and Communications (IPCCC 2004)

Departmental Committee Membership & Service

- 2006-09 CoE Graduate Admissions Committee, Council on Academic Computing, Library Liaison, CS-Day Committee, and Graduate Student Teaching Committee (GREAT).
- 2004-06 CoE Graduate Admissions Committee, Library Liaison, CS-Day Committee, and Graduate Research Competition Review.
- 2003-04 Undergraduate Program Committee and CS-Day Committee.
- 2002-03 C3 Committee and Graduate Research Competition Review.

Publications Peer Review and Referee

- 2004 VLDB Journal, ACM.
- 2004 The International Conference on Dependable Systems and Networks (DSN), IEEE.
- 2004 Real-Time Systems Symposium (RTSS), IEEE.
- 2003 The IEEE Transactions on Parallel and Distributed Systems (TPDS), IEEE.
- 2002 The Conference on Computer Communications (INFOCOM), IEEE.
- 2001–2002 Conference on File and Storage Technologies (FAST), USENIX.
- 2000–2001 Symposium on Operating Systems Principles (SOSP), ACM.
- 1998–1999 USENIX Technical Conference, USENIX.
- 1999 IEEE Workshop on Research Issues in Data Engineering (RIDE), IEEE.
- 1999, 2005 International Conference on Distributed Computing Systems (ICDCS), IEEE.
- 1999 The Journal on Special Topics in Mobile Networking and Applications (MONET), ACM.
- 1998 IEEE Symposium on Reliable Distributed Systems (SRDS), IEEE.

Grant Proposal Review

April 2004 National Science Foundation, Arlington, VA.
October 2003 National Science Foundation, Arlington, VA.
March 2003 National Science Foundation, Arlington, VA.

Membership in Professional Associations

Member, Association for Computing Machinery.
Member, USENIX Association.
Member, IEEE Computer Society.
Member, IEEE Information Theory Society.
Member, IEEE Geoscience and Remote Sensing Society.