

Computer Science Department

Annual Report

2006-2007

Summary

For the period July 1, 2006, through June 30, 2007, the resident faculty of the Computer Science Department included 21 full time faculty members (8 Professors, 5 Associate Professors, 8 Assistant Professors), 1 Temporary Assistant Professor, and 1 part-time Instructor. Permanent professional persons associated with the department included 3 office staff members and 3 technical support personnel.

As of Fall 2006, there were 93 graduate students enrolled in degree programs (52 in the doctoral program, 40 in the MS and 1 in the MAMS), and 200 declared undergraduate majors. Additionally, there were a total of 1262 seats offered in service courses, taken primarily by non-majors. During the past fiscal year, 13 students were awarded Ph.D. degrees and 14 graduated with the M.S. degree. Also, 42 Bachelor's degrees were awarded.

As a group, the faculty authored, co-authored, or edited 138 research articles and other publications and gave 32 presentations at professional meetings. Many of the faculty members have served on editorial boards of distinguished journals. Our faculty were PI, CO-PI, or contributors to 10 externally funded grants. The amount of the external funding totaled \$4,114,839. Also, the faculty received 2 internal grants for the total amount of \$16,000.

Prof. Amit Sheth left the University during the past year to assume a LexisNexis Professorship at Wright State University.

Major Accomplishments

External Research Funding

2006-2007 has been another good year for the faculty of the Computer Science Department. Two new grants were awarded to CS faculty. In total, ten of our faculty members have held externally funded research grants as PIs or Co-PIs. For additional details, please see Appendix B, beginning on page 18.

Dr. Suchi Bhandarkar has continued his work on a grant from the US Dept. of Agriculture. This is the last year of the grant.

Dr. Liming Cai has continued research on an NIH-sponsored project entitled *Searching Genomes for Non-coding RNAs by Their Structure*. This is a joint project with Prof. Russell Malmberg (as a Co-PI), UGA, Department of Plant Sciences.

Dr. Prashant Doshi has received a one year, \$50,000 grant from Microsoft Research for his project on "Semantic Reconciliation with Disparate Sensor Meta-Data for Automatic Publication".

Kang Li and Lakshmith Ramaswamy have received a new, three year grant from NSF for a project entitled *Adaptive Attacks and Defenses in Denial of Information*. The research will be performed in collaboration with Georgia Tech.

Dr. David Lowenthal has continued work on an NSF grant on *Detecting and Alleviating Sources of Scalability Problems*.

John A. Miller and Eileen T. Kraemer (Co-PIs), together with Dr. Jessica Kissinger (PI), a Professor in the Genetics Department at UGA, have continued their work on the NIH funded project entitled *Integrated Databases for Apicomplexan Pathogens*.

Dr. Amit Sheth, has continued working on the project funded by ARDA on *Ontology, Metadata and Semantic Association Support for Semantic Agent Based Document Protection*.

Drs. Amit Sheth, Budak Arpinar, John Miller, and Krys Kochut have continued research on a grant from NSF for their project *SemDis: Discovering Complex Relationships in Semantic Web*.

Drs. Amit Sheth, Krys Kochut, and John Miller have continued their work on the NIH-sponsored project entitled *Bioinformatics of Glycan Expression*. This is a part of a large five year project (\$6,700,000) originating from the Complex Carbohydrates Research Center (Dr. Michael Pierce, PI).

Scholarly Publishing

The Computer Science faculty members have been very productive in publishing their research results. We have authored, co-authored, or edited 138 articles and other publications in 2006-2007. They were published or accepted for publication in high quality journals and conference proceedings. Our faculty gave 32 presentations at conferences, 6 of which were presented abroad. For the list of publications, please see Appendix C, beginning on page 20.

Conference Organization

As in the previous years, Dr. Hamid Arabnia has organized the *2007 International MultiConference on Computer Science and Computer Engineering*. The Conference was held in June 2007, Las Vegas, Nevada. Dr. Arabnia has served as the General Chair of the MultiConference.

The LSDIS lab, one the research labs in our Department, organized the *5th International Semantic Web Conference*. This large (550 participants) conference was held in Athens, GA, in November, 2006, at the Georgia Center for Continuing Education. In addition, Prof. Budak Arpinar served as the Local Organization Chair, while Prof. Amit Sheth as the Industry Track Chair.

Dr. Thiab Taha organized the *Fifth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory*. The conference was held in

Athens, Ga., April 16-19, 2007. Dr. Taha received funding for the organization of the conference from NSF.

Strategic Planning

Computer Science Education

Increasing the appeal of our undergraduate program, and Computer Science in general, has become one of our most important long range goals. This is especially true in view of the recent decline in undergraduate enrollments at UGA and in the nation. We have made important improvements to our undergraduate program in Computer Science. We have introduced *Areas of Emphasis*, which allow our students to focus on one of the available 6 areas, including Computer Systems, Software Design, Computational Science and Visualization, Internet and Information Technology, Theoretical Computer Science, and Artificial Intelligence. A selected Area of Emphasis may be completed by a specific selection of some of the required and elective courses. Typically, it does not require any additional coursework beyond the regular requirements for the B.S. degree in Computer Science.

In addition, our faculty members have introduced 10 new courses to our curriculum. The additions included 2 undergraduate, 5 split-level, and 3 advanced graduate courses. Furthermore, we have revised a number of our current courses. Our courses cover a wide range of topics for both undergraduate and graduate students.

As of Fall 2006, there were 93 students enrolled in graduate degree programs: 52 in the doctoral program, 40 in the MS program, and 1 in the MAMS program. Our Ph.D. program has continued to improve and grow. In the past year, 13 students were awarded Ph.D. degrees, the highest number so far. We are hoping that we will continue increasing the number of doctoral graduates. This situation should improve once the number of graduating Ph.D. students grows, increasing the number of assistantships available made available for recruiting. As stated in our plan, we intend to increase the number of our Ph.D. students.

Faculty Recruitment

Immediately after the departure of Prof. Amit Sheth, the Department made a request for permission to recruit his replacement. Our request has not been granted in the past year. We plan to continue our efforts to recruit Prof. Sheth's replacement.

Space

In Spring, 2006, we have been notified that our offices and labs in Barrow Hall would be moving to Boyd Graduate Studies, some time during Summer, 2006. This will be a significant improvement for us, since our faculty and their labs will be located in 2 building (Boyd and Hardman Hall), instead of 3. This should improve the cohesiveness among the faculty body.

However, the move will not result in any increase of our space, and our overall space will continue to be insufficient. Most importantly, many of our faculty members have insufficient lab space, and a large portion of our graduate students have no office space whatsoever. There is no room which could serve as the Computer Science commons room.

We have reconfigured our main Computer Science Laboratory in 307 Boyd Grad Studies. Many of our students rely on their own laptop computers and do not require access to

departmental computing workstations. As a result, we have decreased the number of workstations in the lab. After a transition of one of our PC labs to the recovered space in 307, we have been able to create an additional lecture room in 208 Boyd Grad Studies. The new lecture room has been equipped with an overhead projector, laptop, and the associated network and video devices.

A. Short-Term Goals for FY 2008

Program Review

Our most recent Program Review and Assessment was conducted during the 2003-2004 academic year. The next review has been scheduled for AY 2010-2011.

Faculty Recruitment

We are planning to recruit a replacement faculty for Prof. Amit Sheth who left UGA in December, 2006. Also, we plan to initiate recruiting for a joint position with a unit in the Biological Sciences Division, or with the Faculty of Engineering, depending on funding availability.

Space

Despite the already described move of our offices from Barrow to Boyd, the department continues to suffer from an insufficient amount of space, especially in view of the recently hired faculty with research interests in experimental Computer Science. We have presented a document detailing our space needs to Dean of Arts and Sciences in 2006, but no additional space has been allocated to the Department.

B. Effectiveness Assessment

The Undergraduate Assessment Report for the academic year 2006-2007 has been created and submitted to the College. The report stated that we are doing a good job of meeting our stated learning objectives. Also, while we would like to attribute our improved performance measurements entirely to better teaching, the improvements may also be partly due to better students. The overall level of student preparation has improved partly in step with the overall rise in the quality of entering UGA students, and partly because the recent decline in the number of Computer Science majors has left us with the most highly motivated students.

C. Student Retention and Graduation Rates

As of Fall 2006, there were 195 declared undergraduate CS majors, a decrease of 36 students in comparison to Fall 2005. Our observed decline in the undergraduate student population has continued to be consistent with the decrease in the numbers of undergraduate CS majors across the country. However, the rate of decline has slowed significantly in the past year.

In the past year, 42 students graduated with B.S. in Computer Science, an increase in comparison to AY 2005. Most of our students found employment and some have continued their education at the graduate level at UGA, or other institutions.

As of Fall 2006, there were 93 students enrolled in graduate degree programs: 52 in the doctoral program, 44 in the MS program and 1 in the MAMS program. In the past year, 13 students were awarded Ph.D. degrees. As in the previous years, the availability of funding for graduate students continues to be a very important factor in the overall health of the

graduate program. In Fall 2006, 63 graduate students received financial support, as follows: Graduate Assistants, 40%; Graduate Teaching Assistants (in charge of a course), 6%; Research Assistants supported by external funding, 46%; University Wide Assistantships, 8%. In comparison to Fall 2005, a higher percentage of our students were supported by external funding.

Computer Science Ph.D. production was again at an all time high, as reported in the 2006-2007 Taulbee Survey. In all, 1,775 Ph.D.s were awarded between during this time.

In addition to graduate students and majors, the department taught several courses of a service nature, including CSCI 1100 (Introduction to Personal Computing), CSCI 1210 (Introduction to Computational Science), CSCI 1301 (Introduction to Computing and Programming), and CSCI 7010 (Computer Programming). A total of 1272 seats were offered in these courses.

D. Overall Status

Employment prospects for our graduates have been good at all levels. Nearly all of our students found employment almost immediately after graduation. We have graduated 13 Ph.D. students, the highest number so far, and several more are at the late stages in their doctoral programs. We have continued to provide quality education to a large number of students, both majors and non-majors.

In terms of research, our record, both in terms of external funding and scholarly publishing, has continued to improve. However, Prof. Amit Sheth left UGA. Replacing him will be an important goal, especially in view of his very good record in publishing and funding.

We have experienced a much smaller decrease in the number of undergraduate Computer Science majors, a decline nonetheless. To combat this trend, we have made improvements to our undergraduate program, both in terms of changes to the degree requirements, and in terms of the available courses.

We believe that the professional environment for Computer Science at UGA has continued to be very good.

APPENDICES

Attached are detailed listings of professional activities, grants, publications, and presentations of the faculty during the past year.

A. PROFESSIONAL HONORS AND RECOGNITIONS

H. R. Arabnia

Consulting Editor, International Journal of Computational Intelligence in Bioinformatics and Systems Biology (IJCIBSB), InderScience Publishers, 2007 – present.

Associate Editor, International Journal of Information Technology and Web Engineering (IJITWE, IGI Global), 2007 – present.

Editor-in-Chief, Journal of Supercomputing (Kluwer Publishing), Nov. 1997 – present.

Member, Editorial Advisory Board, The International Journal of Communication Systems (IJCS), published by John Wiley, 2000 – present.

Member, Editorial Board, Computing Letters, Cambridge International Science Publishing Ltd., 2001 – present.

Member, Board of Advisors, The International Journal of Information Technology and Systems (Editor-in-Chief, Prof. David Rine, George Mason University), 2002 – present.

Editorial Board Member, International Journal of Information Technology and Web Engineering, 2004 – present.

Member, Advisory Committee, IEEE Task Force on Cluster Computing (IEEE/TFCC), 2003 – present.

Journal of Parallel and Distributed Computing, JPDC, 1994 – present.

IEEE Transactions on Parallel and Distributed Systems, 1995 – present.

Member of Editorial Board Lecture series on Computer and Computational Sciences, VSP (Brill Academic Publishers), 2004 – 2007.

Associate Editor, International Journal of Parallel & Distributed Systems & Networks (IJPDSN), Published by ACTA Press (Since 1999).

Member of Executive Board of Editors, American Journal of Applied Sciences, ISSN#: 1546-9239, USA (since 2003).

Member of Scientific Advisory Board, IOS Press, Medical and Care Compunetics, ISSN# 0926-9630 (since 2004).

Member of Editorial Board, International Journal of Information Technology: Applications and Management (IJITAM) (since 2005).

Member of Editorial Board, International Journal Engineering, Management and Science (IJEMS) (since 2005).

Member of Editorial Board, Engineering Letters, ISSN: 1816-0948 and 1816-093X (since 2005).

Program Committee Member, International Conference on Parallel and Distributed Computing and Systems, PDCS, (1996 – 2006).

Member of Advisory Board of Virtual Medical Worlds - an on-line magazine by Euromed (European Commission in Telemedicine), <http://www.hoise.com/project/VMW>, 1997 – present).

Member of Program Committee, 12th International Conference on Parallel and Distributed Systems (ICPADS) / Systems Architecture, Minneapolis, USA, July 2006.

Prepared Questions for Educational Testing Service (ETS) GRE Computer Science Subject Test ETS, 2004, 2005, 2006.

Listed in Marquis Who's Who in Science and Engineering (1999 – present)

Evaluator (15 departments), National Research Council (NRC) Survey of Program Quality, national ranking of CS and CE departments ranking, 2007.

Member of Steering Committee, IEEE 7th Symposium on BioInformatics & BioEngineering (BIBE 2007), October 14-17, Boston, Massachusetts, USA, 2007.

General Chair, WORLDCOMP'07 (World Congress in Computer Science, Computer Engineering, and Applied Computing; Academic Sponsors: MIT Media Lab., TACC of University of Texas at Austin, University of Harvard's Computational Biology and Functional Genomics Lab, Purdue University's Statistical & Computational Intelligence Lab, Georgia Institute of Technology's BioMedical Informatics & Bio-Imaging Lab., and others; Corporate Sponsors: Google, Intel, Salford Systems. June 25-28, Las Vegas, USA, 2007.

Member of Steering Committee, 6th Int'l Conf. on Machine Learning & Applications, December 13-15, IEEE Computer Society, Cincinnati, Ohio, USA, 2007.

Member of Steering Committee, 2nd Int'l Conf. on Multimedia & Ubiquitous Engineering (MUE 2008), IEEE Computer Society, April 24-26, Seoul, Korea, 2008.

Member of Program Committee, 3rd IEEE Int'l Workshop on Performance Modelling and Analysis of Communication in Wired & Wireless Networks (PMAC-2WN'07) in conjunction with 13th Int'l Conf. on Parallel & Distributed Systems (ICPADS 2007), December 5-7, Hsinchu, Taiwan, 2007.

Member of Program Committee, ICCS 2007, Int'l Conf. on Computational Science, May 27-30, The 2nd Workshop on Internet Computing in Science & Engineering (ICSE'07), Beijing, P. R. China, 2007.

Panel Chair, the 2008 International CSI Computer Conference, March, Kish Island, Iran, 2008.

Member of Program Committee, IEEE Computer Society in cooperation with ACM SIGARCH, 7th Int'l Workshop on Performance Modeling, Evaluation, and Optimization of Ubiquitous Computing & Networked Systems (PMEO-UCNS 2008), in conjunction with IPDPS 2008, April 14-18, Miami, Florida USA, 2008.

I. Budak Arpinar

Member, IEEE Computer Society, 2002 – present.

Member, ACM Sigmod, 1999 – present.

Reviewer, IEEE Internet Computing.

Reviewer, IEEE Transactions on Systems, Man, and Cybernetics.

Reviewer, IEICE Transactions on Information and Systems.

Reviewer, Journal of Intelligent Systems.

Reviewer, Data and Knowledge Engineering Journal.

Reviewer, Encyclopedia of Database Technologies and Applications.

Reviewer, ETRI Journal.

Session Organizer: Semantic Web, 1st International Conference on Semantic Computing, Irvine, CA, 2007.

Program Committee Member: International Semantic Web Conference (ISWC'07), Busan, Korea.

Program Committee Member: 207 IEEE/WIC/ACM International Conference on Web Intelligence, Silicon Valley, CA, 2007.

Program Committee Member: *Web Information Systems Engineering Conference (WISE'2006)*, Wuhan, China, October 2006.

Program Committee Member: *AAAI Fall Symposium on Semantic Web for Collaborative Knowledge Acquisition*, Washington, DC, October 2006.

S. M. Bhandarkar

Associate Editor, International Journal of Applied Intelligence, November 1999 - present.

Associate Editor, The Computer Journal, May 1999 - present.

Member, Technical Committee on Multimedia Computing, IEEE Computer Society, 1998-present.

Member, Technical Committee on Pattern Analysis and Machine Intelligence, IEEE Computer Society, 1992-present.

Member, Association for Computing Machinery (ACM), 1990-present.

Member, International Society of Photo-optical and Instrumentation Engineers (SPIE), 1987-present.

Member, American Association for Artificial Intelligence (AAAI), 1985-present.

Member, Institute for Electrical and Electronic Engineering (IEEE), 1982-present.

Reviewer, USDA SBIR Program 2003, 2004, 2005, 2006.

Reviewer, USDA NRIGGP Program, 2003, 2004, 2005, 2006.

Referee, IEEE Trans. Multimedia, 2003, 2004, 2005, 2006.

Member, Technical Committee on Robot Vision, IEEE Robotics and Automation Society, 1992 - present.

Referee, Journal of Applied Intelligence, 2000 – 2006.

Program Committee Member, IEEE International Conference Image Processing (ICIP), Atlanta, GA, October 2006.

Session Chair, Session on Biomedical Imaging, IEEE International Conference Image Processing (ICIP), Atlanta, GA, October 2006.

Program Committee Member, IEEE International Conference on Advanced Video and Signal-based Surveillance, Sydney, Australia, November 2006.

Program Committee Member, IEEE Workshop on Motion and Video Computing (WMVC), Austin, TX, February, 2007.

Program Committee Member, IEEE Workshop on Applications of Computer Vision (WACV), Austin, TX, February, 2007.

L. Cai

Editorial Board: International Journal of Computational Intelligence in Bioinformatics and Systems Biology, 2006 – present.

Program Committee: International Symposium on Bioinformatics Research and Applications, Atlanta, 2007.

Grant Proposal Review Panel: DOE Advanced Scientific Computing Research, 2007.

Program Committee: IEEE Symposium on Bioinformatics and Bioengineering, 2007.

Reviewer, Algorithmica Journal.

Reviewer, Pure and Applied Logic Journal.

Reviewer, Intel. J. for Bioinformatics Research and Applications.

Reviewer for conferences: IEEE AINA 2007, IEEE-BIBE 2007, CSB 2007, ISBRA 2007.

E. R. Canfield

Reviewer, Math Reviews.

Referee, Journal Combinatorial Theory, Series A and B.

Referee, American Mathematical Monthly.

Referee, National Science Foundation.

Member of the Association for Computing Machinery.

Editor, Electronic Journal of Combinatorics.

P. Doshi

Program Committee Member, First International Workshop on WebServices Composition and Adaptation, 2007.

Program Committee Member, AAAI Spring Symposium on Game Theory and Decision Theory, 2007.

Program Committee Member, Autonomous Agents and Multi-agent Systems Conference (AAMAS), 2007.

Program Committee Member, Artificial Intelligence and Pattern Recognition (AIPR), 2007.

Reviewer, International Joint Conference on AI (IJCAI), 2007.

Reviewer, International Journal of Semantic Web and Information Systems.

S. H. Funk

Member of IEEE

Member of ACM

M. Hybinette

Member, Association for Computing Machinery.

Member, Institute of Electrical and Electronics Engineers.

Reviewer, Journal of Parallel and Distributed Computing.

Reviewer, International Journal of Formal Methods.

Reviewer, Winter Simulation Conference (WSC), 1996 – present.

Reviewer, Workshop on Parallel and Distributed Simulation (PADS), 1997 – present.

K. J. Kochut

Member, Association for Computing Machinery.

Member, SIGMOD.

Member, SIGCOMM.

Reviewer, IEEE Transactions on Knowledge and Data Engineering.

Reviewer, Information Systems.

Referee, The Computer Journal

Referee, Journal of the American Society for Information Science and Technology

Referee, International Journal of Computer Simulation

Referee, Data and Knowledge Engineering

Referee, IEEE Transactions on Knowledge and Data Engineering

Referee, Cole Publishing

Member of the Program Committee, International Multiconference on Computer Science and Information Technology, Wisla, Poland, November 6-10, 2006.

E. T. Kraemer

VISSOFT, 2007 – 4th IEEE International Workshop on Visualizing Software for Understanding and Analysis.

ICPC 2007 – 15th IEEE Conference on Program Comprehension.

Information Visualization in Biomedical Informatics (IVBI), 2007.

Member, Anita Borg Technical Leadership Award Committee, Anita Borg Institute for Women and Technology (2006, 2007).

Member, Tutorials Committee, Supercomputing 2006.

First Workshop on Empirical Assessment of Software Engineering Languages and Technologies (WEASELTech'07), Organizer with Jonathan Maletic.

Working Session on “Designing your Next Empirical Study on Program Comprehension”, held at ICPC2007, Organizer with Massimiliano diPenta and R.E.K. Stirewalt.

Referee, IEEE Transactions on Systems, Man, and Cybernetics
Referee, CHI2006 (ACM)
Referee, ACM Transactions on Software Engineering and Methodology
Referee, National Science Foundation, Advanced Computational Research Program.
Referee, IEEE Transactions on Visualization and Computer Graphics.
Referee, IEEE Transactions on Software Engineering.
Referee, IEEE Transactions on Parallel and Distributed Systems.
Referee, Transactions on Software Engineering and Methodology.
Referee, Bioinformatics.
Referee, Journal of Parallel and Distributed Computing.
Referee, The Computer Journal.
Referee, Software-Practice and Experience Cybernetics and Systems.

Kang Li

Conference Co-Chair for CEAS, 2007.
Session Chair for ACM/SPIE MMCN, 2007.
TPC Member for IEEE ICCCN NeTRA, 2007.
TPC Member for ACM/SPIE MMCN, 2007.
Member of ACM
Member of SIGCOMM
Reviewer for ACM Transaction on Multimedia Computing, Communication and Application, 2006, 2007.
Reviewer for Elsevier Journal of System and Software, 2007.

D. K. Lowenthal

Member, ACM, 1992-present.
Member SIGPLAN, 1992-present.
Member, SIGOPS, 1992-present.

Referee, International Parallel and Distributed Processing Symposium (IPDPS).

Referee, Computer Languages.

Referee, Architectural Support for Programming Languages and Operating Systems (ASPLOS).

Workshops and Tutorial Chair: PPOPP 2008.

J. A. Miller

Editorial Board Member of International Journal of Simulation and Process Modelling (IJSPM), 2004 – present.

Editorial Board Member of the Journal of Simulation (JOS), 2005 – present.

Associate Editor, ACM Transactions on Modeling and Computer Simulation (TOMACS), 1999 – present.

Associate Editor, IEEE Transactions on Systems, Man and Cybernetics (TSMC), 1999 – present.

Organization Chair, The Fourth International Workshop on Semantic Web for Services and Processes (SWSP'2007), July 2007.

Referee, ACM Transactions on Modeling and Simulation.

Referee, IEEE Transactions on Systems, Man and Cybernetics (TSMC).

W. D. Potter

Editorial Board Member, “Applied Intelligence”, since 1993. (The International Journal of Artificial Intelligence, Neural Networks, and Complex Problem-Solving Technologies, Editor-in-Chief: Professor Moonis Ali, Kluwer Academic Publishers).

Regional Editor, International Journal of Hybrid Intelligent Systems, 2003 – present.

Associate Editor, Journal of Intelligent and Fuzzy Systems, 2003 – present.

Program Committee Member, International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, (IEA/AIE'2007), June 2007.

Program Committee Member, 4th Indian International Conference on Artificial Intelligence (IICAI'2007), June 2007.

Program Committee Member, International Multi-Conference on Systems, Cybernetics and Informatics (WMSCI'2006), July 2006.

External dissertation reviewer: Swinburne University of Technology, Victoria, Australia, 2006.

Referee, IEEE Computer.

Referee, IEEE Trans. On Systems, Man, & Cybernetics.

Referee, International Journal for Applied Intelligence.

Referee, Journal of Intelligent and Fuzzy Systems: JIFS.

Referee, Pattern Recognition Letters.

L. Ramaswamy

Reviewer for IEEE Transactions on Knowledge and Data Engineering (TKDE), IEEE Transactions on Parallel and Distributed Systems (TPDS), and VLDB Journal.

Reviewer for IEEE Internet Computing Journal.

K. M. Rasheed

Member, Institute of Electrical and Electronics Engineers (IEEE).

Member, IEEE Computer Society.

Member, IEEE Neural Network Society.

Member, International Society for Genetic and Evolutionary Computation (ISGEC).

Member, American Association for Artificial Intelligence (AAAI).

Program committee member, The Congress on Evolutionary Computation (CEC'2004, CEC'2005, CEC'2006).

Program committee member, Genetic and Evolutionary Computation Conference (GECCO'99, 2000, 2002, 2003, 2004, 2005, 2006).

Referee, IEEE Intelligent Systems.

Referee, IEEE Transactions on Evolutionary Computation

Referee, IEEE Transactions on Systems, Man and Cybernetics (Part A).

Referee, Journal of Machine Learning Research (JMLF).

Referee, Journal of Artificial Intelligence Research (JAIR).

Referee, Artificial Intelligence in Engineering Design and Manufacturing (AIEDAM).

Referee, International Association for Mathematics and Computers in Simulation (IMACS).

Referee, Machine Learning Journal (MLJ).

Referee, Applied Intelligence.

Referee, Pattern Recognition Letters.

R. W. Robinson

Editorial Board, Journal of Combinatorial Mathematics and Combinatorial Computing (1987-present).

A. P. Sheth

Member of the Editorial Board, Journal on Web Semantics: Science, Services and Agents on the World Wide Web, 2003 – present.

Senior Member (2003), IEEE and IEEE Computer Society, including Technical Committee on Database Engineering, 1981 – present.

Member of the Editorial Board, International Journal of Intelligent and Cooperative Information Systems, 1995 – present.

Editor, IEEE Multimedia, November 1998 – present.

Member of the Editorial Board, Information Systems - an Intl. Journal, 1993 – present.

Member of the Editorial Board, Journal on Distributed and Parallel Databases, 1992 - present.

Associate Editor, SIGMOD Record, 1988 – present.

Member, Association for Computing Machinery, SIGMOD and other SIGs.

Member, IEEE Computer Society, including Technical Committee on Database Engineering.

Member of the Board and Founding Member, International Foundation on Cooperative Information Systems, 1996 – present.

Editorial Board, International Journal of Cooperative Information Systems, 1996 – present.

Editorial Board, Information systems-An International Journal, 1998 – present.

Referee, VLDB Journal.

Referee, National Science Foundation.

Referee, Research Council of Norway.

Referee, Information Systems.

Referee, Intelligent Information Systems.

Referee, Distributed and Parallel Databases.

Referee, Intelligent and Cooperative Information Systems.

Referee, Computer.

Referee, IEEE Transaction on Knowledge and Data Engineering.

Referee, Edited 3 Database Research Center Reports for *ACM SIGMOD Record* as Associate.

Referee, Edited 3 Media Reviews for IEEE Multimedia.

J. W. Smith

Member of IEEE

Reviewer for Computing Reviews, 1978 - 1986, 1990, 1994 - present.

T. R. Taha

Member, Association of Computing Machinery (ACM).

Member, Society for Industrial and Applied Mathematics (SIAM).

Member, SIAM SEAS.

Member, International Association for Mathematics and Computers in Simulation (IMACS).

Member, SIAM Activity Group on Supercomputing.

Member, SIAM Activity Group on Computational Science.

Member, IMACS technical committee on Dynamical Systems and Nonlinear Science, 1992 - present.

Member, Institute of Electrical and Electronics Engineers (IEEE), Inc.

Referee, Journal of Computational Physics.

Referee, Applied Numerical Mathematics (IMACS Journal).

Referee, Computers and Mathematics with applications.

Referee, Mathematics and Computers in Simulation.

Referee, Numerical Mathematics for Partial Differential Equations.

Referee, Institute of Physics Publishing Research Journal, UK, 1997 – present.

Referee, Simulation: The Journal of the Society for Computer Simulation, Hong Kong.

Referee, Journal of Science and Technology/Sultan Qaboos University of Oman.

Referee, Derasat/Journal of Sciences, University of Jordan, Jordan.

Referee, Journal of Physics A: Mathematical and General.

Referee, Journal of Physics B: Molecular and Optical Physics.

Referee, Numerical Algorithms, C. Brezinski, Editor-in-Chief, France.

Referee, The Korean Journal of Computational and Applied Mathematics.

Referee, Journal of Parallel and Distributed Computing.

Referee, IEEE Transactions on Systems, Man, and Cybernetics.

Member, Editorial Board of The International Arab Journal of Information Technology (IAJIT).

B. GRANTS AWARDED OR CURRENT

EXTERNALLY FUNDED GRANTS

Bhandarkar, S.M. (with Dr. J. Arnold, Co-PI) US Dept. of Agriculture, “Novel Statistical Methods for Generation of Integrated Genomic Maps”, Sept. 1, 2002 - Aug. 31, 2006, \$280,644.

Cai, Liming (PI) (with R. Malmberg of Plant Biology and M. McEachern of Genetics, Co-PI/s), “Searching Genomes for Non-coding RNAs by Their Structure”, National Institutes of Health, Biomedical Informatics Science and Technology Initiative, June 1, 2006 – May 31, 2009, \$716,352.

Canfield, E.R. (PI), J.W. Smith and H.R. Arabnia, University of Georgia Yamacraw Program (2005-2006), Georgia Governor’s Office, \$604,756, continued support for permanent/continued staff and faculty positions for the Department of Computer Science.

Doshi, Prashant (PI), “Semantic Reconciliation with Disparate Sensor Meta-Data for Automatic Publication”, Microsoft SensorMap, May 2007 – April 2008, \$53,864.

Kissinger, Jessica (PI), John A. Miller and Eileen T. Kraemer (Co-PIs), “Integrated Databases for Apicomplexan Pathogens”, National Institutes of Health (NIH), July 2004 – June 2009, \$3,100,000 (CS Portion \$538,816).

Mueller, Frank (PI), David Lowenthal (Co-PI), National Science Foundation Computing Processes and Artifacts (FCPA), “Detecting and Alleviating Sources of Scalability Problems”, September 2004 – August 2007, \$164,152.

Pierce, Michael (PI), et al., Co-PI’s in CS: Amit P. Sheth, Krys J. Kochut and John A. Miller, “Bioinformatics of Glycan Expression,” National Institutes of Health (NIH), July 2003 - July 2008, \$6,700,000 (Computer Science portion \$709,401).

Pu, C. (PI), K. Li (PI) and L. Ramaswamy (Co-PI), “CT-T: Adaptive Attacks and Defenses in denial of Information”, National Science Foundation Cybertrust program, 2007-2010, \$800,000 (UGA component - \$231,854).

Sheth, Amit P., Budak I. Arpinar, John A. Miller and Krys J. Kochut, “SemDis: Discovering Complex Relationships in Semantic Web,” National Science Foundation, Information Technology Research (NSF-ITR), October 1, 2003 – December 31, 2006, \$800,000.

Sheth, A. (PI) “Ontology, Metadata and Semantic Association Support for Semantic Agent Based Document Protection”, ARDA funded project (subcontract to CTA, Inc.), \$268,716, October 19, 2004 – November 30, 2006.

Taha, Thiab (PI), NSF, Support for the Fourth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory Conference", \$15,000, August 1, 2004 - July 31, 2006.

INTERNALLY FUNDED GRANTS

Doshi, P. (PI), UGARF Faculty Research Grant, “Autonomous Web Processes: Theory and Applications”, January 2006 to December 2006, Amount: \$8,000.

Ramaswamy, L. (PI), “Cooperative Edge Cache Grid: Efficient Sharing and Dissemination of Dynamic Content”, \$8,000, University of Georgia Research Foundation, 01/01/2006 – 12/31/2006.

C. FACULTY PUBLICATIONS AND PRESENTATIONS

PUBLISHED ARTICLES AND CHAPTERS IN BOOKS: (senior author listed first)

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PRESENTATIONS AT MEETINGS

1. Bhandarkar, Suchendra M., “Novel Graph Theoretic Enhancements to ICP-Based Virtual Craniofacial Reconstruction”, *Fourth IEEE International Symposium on Biomedical Imaging (ISBI)*, Arlington, VA, April 12-15, 2007.
2. Bhandarkar, Suchendra M., “Hairline Fracture Detection using MRF and Gibbs Sampling”, *Eighth IEEE International Workshop on Applications of Computer Vision (WACV)*, Austin, TX, February 21-22, 2007.
3. Bhandarkar, Suchendra M., “Video-based Metrology of Water Droplet Spreading on Nanostructured Surfaces”, *Eighth IEEE International Workshop on Applications of Computer Vision (WACV)*, Austin, TX, February 21-22, 2007.
4. Bhandarkar, Suchendra M., “A Multiscale Parametric Background Model for Stationary Foreground Object Detection”, *IEEE International Workshop on Motion and Video Computing (WMVC)*, Austin, TX, February 23-24, 2007.
5. “FMOE-MIR: Content-driven Multi-resolution MPEG-4 Fine-grained Scalable Layered Video Encoding”, *ACM Conference Multimedia Computing and Networking (MMCN)*, San Jose, CA, January 31 – February 1, 2007.
6. Bhandarkar, Suchendra M., “Nonparametric Background Modeling Using the CONDENSATION Algorithm”, *IEEE International Conference Advanced Video and Signal-based Surveillance (AVSS 2006)*, Sydney, Australia, November 22-24, 2006.
7. Bhandarkar, Suchendra M., “Virtual Craniofacial Reconstruction from Computed Tomography Image Sequences Exhibiting Multiple Fractures”, *IEEE International Conference Image Processing (ICIP 2006)*, Atlanta, GA, October 2006.
8. Bhandarkar, Suchendra M., “A Boosted Adaptive Particle Filter for Face Detection and tracking”, *IEEE International Conference Image Processing (ICIP 2006)*, Atlanta, GA, October 2006.
9. Bhandarkar, Suchendra M., “Mask-based Multi-Resolution Images and Videos”, *IEEE International Conference Image Processing (ICIP 2006)*, Atlanta, GA, October 2006.
10. Bhandarkar, Suchendra M., “Efficient Recursive Linking Algorithm for Computing the Likelihood of an Order of a Large Number of Genetic Markers”, *Life Sciences Society International Conference Computational Systems Bioinformatics (CSB 2006)*, Stanford University, Palo Alto, CA, August 2006.
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14. Doshi, Prashant, “End-to-End Semantics in Sensor Net 2.0”, *SensorNet 2.0 Panel*, Microsoft Research Faculty Summit, July 2007.
15. Doshi, Prashant, “Graphical Models of Online Solutions to Interactive POMDPs”, *Sixth International Autonomous Agents and Multiagent Systems Conference (AAMAS)*, Honolulu, Hawaii, May 2007.
16. Doshi, Prashant, “Toward Optimal and Efficient Adaptation in Web Processes”, *IBM India Research lab (IRL)*, India, January 2007.

17. Doshi, Prashant, "Adaptive Web Processes Using Value of Changed Information", Fourth International Conference on Service-Oriented Computing (ICSOC), Chicago, IL, Dec 5, 2006.
18. Doshi, Prashant, "A Hierarchical Framework for Composing Nested Web Processes", Fourth International Conference on Service-Oriented Computing (ICSOC), Chicago, IL, Dec 5, 2006.
19. Doshi, Prashant, "Inexact Matching of Ontology Graphs Using Expectation-Maximization", National Conference on AI (AAAI), Boston, MA, July 18, 2006.
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