

2006-2007 :: Graduate Certificate in Information Assurance

1. Mission Statement:

The mission of the Graduate Certificate with Concentration in Information Assurance is to provide students with foundations in theory and practice of computer security and information assurance and to prepare them for careers in industry and government that require expertise in these areas.

2. Objectives:

2.1 Master Computer and Information Security:

The student will be able to demonstrate a mastery of computer and information security.

2.1.1 Related General Education Outcome Item(s): 11. Advanced Knowledge in Discipline(s)

2.1.2 Related Strategic Plan Item(s): IV-1 National and Global Security

2.1.3 Related Institutional Priority Item(s): COM-3 Sustain Progress toward Tier One Status in terms of programs, research and faculty quality; COM-4 Enhance research, graduate education and technology-driven economic development

2.1.4 Student Related Objective: Yes - This is a student related objective.

2.2 Articulate concepts of Data& Applications Security: The student will be able to articulate the major concepts of Data and Applications Security

2.2.1 Related General Education Outcome Item(s): 11. Advanced Knowledge in Discipline(s)

2.2.2 Related Strategic Plan Item(s): IV-1 National and Global Security

2.2.3 Related Institutional Priority Item(s): COM-3 Sustain Progress toward Tier One Status in terms of programs, research and faculty quality; COM-4 Enhance research, graduate education and technology-driven economic development

2.2.4 Student Related Objective: Yes - This is a student related objective.

3. Measures & Findings:

3.1 In-class assessment:

For all graduate courses classified as IA courses, the MS CS outcomes (a)-(f) will be assessed on a scale of 1 (worst) to 5 (best).

3.1.1 Success Criteria:

Goal will be met if an average of 3.5 or higher is recorded for all (a)-(f) MS CS categories covered by the graduate IA courses.

3.1.2 Related Objective(s): Master Computer and Information Security

3.1.3 Numerical Results: The average of all responses for graduate courses that are related to IA is 3.98.

3.1.4 Achievement Level: Met

3.1.5 Further Action: No

3.2 Alumni Survey:

The Alumni Survey is conducted every year and is spearheaded by a focus group meeting and survey distributions. This process allows UTD to collect both quantitative and qualitative data.

3.2.1 Success Criteria:

Average of responses for outcomes a and b is at least 4.5 (on a scale of 1-6 used by the survey instrument).

3.2.2 Related Objective(s): Master Computer and Information Security

3.2.3 Results Related To Success Criteria: A graduate alumni survey is planned.

3.2.4 Achievement Level: Met

3.2.5 Further Action: Yes

3.3 In-class assessment:

For all graduate courses classified as IA courses, the MS CS outcomes a-f will be assessed on a scale of 1 (worst) to 5 (best).

3.3.1 Success Criteria:

Goal will be met if an average of 3.5 or higher is recorded for all (a)-(f) MS CS categories covered by the graduate IA courses.

3.3.2 Related Objective(s): Articulate concepts of Data& Applications Security

3.3.3 Numerical Results: The average of (a)-(f) measures is 3.98.

3.3.4 Achievement Level: Met

3.3.5 Further Action: No

3.4 Alumni Survey:

The Alumni Survey is conducted every year and is spearheaded by a focus group meeting and survey distributions. This process allows UTD to collect both quantitative and qualitative data.

3.4.1 Success Criteria:

Average of responses for outcomes a and b is at least 4.5 (on a scale of 1-6 used by the survey instrument).

3.4.2 Related Objective(s): Articulate concepts of Data& Applications Security

3.4.3 Results Related To Success Criteria: A graduate alumni survey needs to be conducted.

3.4.4 Achievement Level: Met

3.4.5 Further Action: Yes

5. Closing the Loop:

5.1 The graduate certificate program is running smoothly. No further actions are needed, except for conducting an alumni survey.:

Conduct a survey of alumni who have received graduate certificate in Information Assurance.

5.1.1 Related Objective(s):

Master Computer and Information Security; Articulate concepts of Data& Applications Security

5.1.2 Related Measure(s): Alumni Survey

5.1.3 Responsible Person: Gopal Gupta

5.1.4 Target Date: 2008

5.1.5 Priority: High Priority

6. Analysis:

6.1 Program/Unit Strengths:

6.1.1 Objectives/Outcomes Exceeded or Met: The Graduate Certificate in Info. Assurance program is working quite well. Right now it is only open to our student who are doing an M.S. or a Ph.D. in CS or SE. In the future, we could open it to non-degree seeking students as well.

6.1.2 Other Strengths:

The program provides much needed knowledge to students in area of Info. Assurance, a pressing issue these days.

7. Report:

7.1 Executive Summary:

An assessment of courses was conducted in Spring 2007. The following are detailed outcomes of the process:

* Specific Data Available From Assessment (Ms. Norma Richardson, (972)883-4190, nrichardson@utdallas.edu maintains the data repository)

* Electronic assessment forms for various courses can be found at: <http://www.utdallas.edu/~gupta/assess/Spring07>

For each core as well as majority of special topics courses, the following materials were collected (the items below are available in the course folder for each course):

* Instructor's self assessment of the class using rubrics which are pertinent to the program learning goals

* Student course evaluation forms

* Course materials used in the course (syllabi and handouts)

* Samples of excellent, average, and poor student works (homeworks, exams).

Evidence the assessment data were reviewed by faculty and appropriate administrators: Electronic messages were sent to all faculty members reminding them to start collecting assessment data and be ready to prepare the assessment on Mar 27th, 2007 (sent by Prof. Gopal Gupta, Associate Head, Computer Science). Subsequent reminders were sent on April 23rd (exam week) and May 1st, 2007. Assessment forms were submitted electronically to Gopal Gupta and the electronic repository can be seen at <http://www.utdallas.edu/~gupta/assess/Spring07>.

Also, each course has a course coordinator assigned (list of course coordinators can be seen at <http://www.utdallas.edu/~gupta/sacs/coordinators.txt>), who filled out a course update form after consulting the

faculty members who taught that course. The course update forms were collected and reviewed by Prof. Gopal Gupta. The course-update forms may be found in the course folders maintained by Ms. Norma Richardson ((972)883-4190, nrichardson@utdallas.edu). Furthermore, Prof. Gopal Gupta (gupta@utdallas.edu, (972)883-4107) reviewed the outcomes of the individual course assessments provided by instructors to draw conclusions regarding the program assessment. CS department head, D. T. Huynh ((972)883-2169, huynh@utdallas.edu), was apprised of the result of the assessment process.

Assessment: The program has been running smoothly for a number of years. The main challenge to the program is to make sure that we keep teaching a variety of graduate level information assurance related courses. An additional (low priority) challenge is to enhance the program so that individuals can obtain this certificate without enrolling in the Master's program. Enrollment in the MS program is currently a requirement.

7.2 Top 3 Program/Unit Accomplishments: Dr.Farago

Dr.Farago developed a novel approach to capture the properties of the network topology and related network layer issues in communication networks that operate with multiple physical layers, with special regard to multi-radio networks. The approach is motivated by the fact that it is now technically and economically feasible to put multiple radios in a single network node, opening new avenues of performance. The modeling method is based on graph theory and it makes possible to provide a unified treatment of diverse network layer issues. This approach was the basis of a collaborative research proposal to the National Science Foundation and it was awarded a \$ 350,000 research grant in 2006.

Dr. Gupta

Dr. Gupta and his group developed the technique of coinductive logic programming, that allows one to reason with infinite quantities. This work has significant applications in automated theorem proving, model checking and verification. A coinductive logic programming engine is currently being developed in collaboration with researchers at University of Porto. In addition, coinduction provides a foundation for top down execution of Answer Set Programs (ASP is a formalism for non-monotonic reasoning), which has been an open problem for a long time.

Dr. Gupta and his colleagues received the \$506,000 award from Department of Education (with an equal amount of matching funds from the Jonsson school) for providing fellowship and training to 8 graduate students.

Dr.Guo

While as a PhD student Dr. Guo I developed a novel and high-fidelity Point-based Modeling, Animation, and Simulation System which resulted in more than ten research papers published in top quality journals and conferences.

Dr.Hamlen

In August 2006 Dr.Hamlen completed a dissertation for Cornell University that provided strong evidence favoring a new paradigm for software security enforcement that Dr.Hamlen call Automated Program-rewriting. For his thesis, Dr.Hamlen designed and implemented a prototype Certifying Program-rewriter for the Microsoft .NET Framework, and proved that the system was both sound and complete for a large class of security policies. This work had significant theoretical components that were published in the ACM Transactions on Programming Languages and Systems in January 2006, as well as significant implementation achievements that were presented at the ACM Workshop on Programming Languages and Analysis for Security (a satellite workshop of PLDI).

Dr.Harbagiu

Dr. Harabagiu is Erik Jonsson School Research Initiation Chair and an Associate Professor in the Department of Computer Science. She is the founding Director of UTD's Human Language Technology Research Institute (HLTRI), where she supervises both the Center for Emerging Natural Language Applications and the Center for Search Engines and Web Technologies. Under her leadership, the center received a number of very large grants from federal agencies, most notably, DARPA.

Dr. Jue

Dr. Jue's significant research accomplishments have been the investigation and development of new architectures and protocols for providing quality of service in optical burst switched networks and optical packet switched networks. The work, funded by an NSF CAREER award has resulted in over 8 journal and 25 conference papers on the topic, as well as one book. One paper received a Best Paper award at the Globecom 2005 conference.

Dr.Kantarcioglu

Dr. Kantarcioglu has been concentrating his effort in security and privacy in data management and data mining including privacy-preserving distributed data mining, querying encrypted data, secure sovereign data integration and incentive compatible data sharing. His research proposal was funded by Air Force Office of Scientific Research in 2006. In addition, Dr. Kantarcioglu introduced a new graduate course named "introduction to cryptography".

Dr.Khan

Dr. Khan's recent accomplishment have included the DGSOT algorithm which has been tested on various domains such as text data, and complex data (i.e., 3000 gene micro array expression data and multimedia data) and has demonstrated impressive results. This work was funded by National Science Foundation (NSF) and was published

in Bioinformatics Journal by Oxford University Press. This journal's impact factor is 4.615, and it is ranked 2/47 journals in the Biochemical Research Methods ISI category. This significant research accomplishment has led to opportunities for giving tutorials at prestigious premier conferences such as the ACM International World Wide Web Conference, WWW and a keynote speech in an international conference.

Dr. Yang Liu

Prof. Yang Liu has been very active in research since she joined UTD in 2005. She has been collaborating with other researchers in several universities and institutes in the DARPA funded GALE program (PI at UTD, subcontract to SRI), and also established a new connection with faculty at UTA to study multilingual characteristics across English and Mandarin. In addition, she obtained an NSF grant for speech summarization in the multiparty meeting domain.

Dr. Ying Liu

One of the key aims for genomic and proteomic research is to discovering biomarkers. Biomarkers often serve as early warning signs for various diseases, including cancer, and cardiovascular disease. In order to develop a more robust approach to analyze the quality and reliability of these genomic and proteomic data, discovering biomarkers and providing the researchers an opportunity to control the discovery process, Dr. Liu proposed a novel, efficient method to intuitively and visually show the dominant genes/proteins and samples that are of "thematic" importance in genomic and proteomic data for disease diagnosis and prognosis. The biomarker discovery tools that he has developed are generally useful to the entire biomedical research community.

Dr. Mili

Over the past three years, Dr. Mili took the immense challenge of changing her research area to Multi-Agent Systems (MAS). MAS deals with the development of systems composed of autonomous, intelligent software agents interacting in a dynamic, non-deterministic environment to achieve individual and global goals through collaboration and negotiation. She took over the challenge of developing a MAS simulation tool using the ideas she developed; this resulted in 4 conference papers and a journal publication. Her research community is now considering adopting her architecture and concepts as standards. In addition, several organizations expressed interest in her work. She has started a collaboration with UNT on the development of a multi-agent system for land-use change; she has interacted with Rockwell Collins, Scenpro and Raytheon. Scenpro has proposed a collaborative project, the Virtual Soldier Skills Assessment System that her team is currently investigating.

Dr. Mittal

Dr. Mittal has recently developed several efficient distributed algorithms for resource management when it is possible for processes to execute their critical sections simultaneously under certain conditions. These algorithms have the best performance (worst-case as well as average-case) in their respective categories among all existing algorithms that have been proposed so far.

Dr. Moldovan

In 2006, Dr. Moldovan received a personal request from Division Director, Computing and Communication Foundations, National Science Foundation, to provide a nugget that exemplifies the results of NSF support, in regards the successful release of eXtended WordNet. Specifically, this is to highlight successful projects where NSF support years ago made a big difference in research, tools, or infrastructure today. Extended WordNet has contributed to many fields including Natural Language Processing, Computational Linguistics, Education, Human Resources, research, as well as Science and Engineering, as is available for download online from the University of Texas at Dallas, free of charge. Since its inception there has been over 5000 downloads from across the world. Eight graduate students participated in the research and development of this project, which allowed them to apply their knowledge of Extended WordNet to Question Answering, Ontology Development, Semantic Parsing, and Spoken Dialogue. The Students also provided recommendation for improvement of WordNet to Princeton University, where it is being developed.

Dr. Ng

Dr. Ng's is widely known in the natural language processing (NLP) community for his research on coreference resolution, which is considered one of the most difficult problems in NLP. His paper "Improving Machine Learning Approaches to Coreference Resolution", which appeared in the 40th Annual Meeting of the Association for Computational Linguistics in 2002, has been cited more than 100 times according to Google Scholar.

Dr. Page

Dr. Page has been coach to UT Dallas programming teams over the past 6 years. This task requires the planning, running, and judging of about 10 four-hour contests at UTD each year, to prepare teams for the Regional Contests in November. UTD student programming team has placed 2nd, 3rd, 4th, 7th, and finally 1st in the Three-State Regional Contests. This year, for the first time, the team, coached by Dr. Page, will compete in the World Finals in Tokyo in March.

Dr. Prabhakaran

Dr. Prabhakaran has been working in the broad area of multimedia systems and networks. In the last 3 or 4 years, he has been focusing on content-based retrieval and streaming of 3D models and motions, with applications focused in the areas of medicine and arts/cultural/entertainment studies. In 2003, Dr. Prabhakar won the prestigious NSF CAREER award for his proposal on Animation Databases. So far, this project has produced several

interesting results that have promising broader impacts in different areas. National Science Foundation (NSF) has selected information about his CAREER grant for inclusion in the FY 2006 NSF Government Performance and Results Act (GPRA) Report to the US Congress. (Only a very few of the existing grant PIs are invited for this according to the email from the NSF Program Director, Dr Maria Zemankova).

Dr. Raghavachari

Dr. Raghavachari was one of the principal investigators for the E-Plan project, funded by the Environmental Protection Agency (EPA), along with Gopal Gupta and Doug Harris. The project has been funded since 2000, and Dr. Raghavachari has been managing the technical aspects of the project, including development of the system, and installation of a high-availability system. The system has hundreds of users across the United States, and provides access to critical data during emergencies. The project has provided high visibility to UTD in the Emergency management arena, and has generated over \$2 Million in funding over the last few years.

Dr. Sarac

During the last three to four years, his research work in IP multicast service management area has received a significant attention from the networking research community, the network protocol standardization bodies, namely Internet Engineering Task Force (IETF), and the networking industry. More specifically, in the research community, his work in developing multicast monitoring and management tools and services resulted in three high quality journal publications and several other conference publications. In the standardization area, part of his work was standardized as an IETF RFC (RFC 3611). In addition, another part of our work, namely ssmpting utility, is currently being considered for standardization at the IETF.

Dr. Sha

Dr. Sha has been very active and productive in conducting research. From 2003 to the summer of 2007, has graduated seven PhD's at UTD. Two of them received the Best ECS PhD Dissertation Awards in 2003 and 2005, respectively. He has been awarded several grants such as those from National Science Foundations and has published more than 220 refereed publications in which more than 50 of them are journal articles (many were published in IEEE and ACM Transactions.).

.

Dr. Sudborough

Dr. Sudborough's most significant research accomplishment within the last three or four years has been in the area of the design and analysis of algorithms for sorting with restricted operations. These algorithms have applications in computational biology, e.g. phylogeny, as well as in the area of interconnection networks. He has, with a group of graduate students and a postdoctoral researcher, improved the upper bound on the Pancake Problem. This is a well known problem that has resisted any improvement since 1979, when Bill Gates and Professor Christos Papadimitriou exhibited a $5n/3$ upper bound. In addition, he has improved significantly on previously published upper bounds for sorting by "short swaps", by "prefix transpositions", by "cut and paste" operations, and by "block moves". Furthermore, he has improved the lower bounds for these problems significantly, and has shown that finding optimum algorithms is presumably difficult, by showing that the problems are NP-complete.

Dr. Zhang

Dr. Zhang's research group proposed a new graph grammar formalism, called the Spatial Graph Grammar, which integrates both the spatial and structural specification mechanisms in a single framework. This formalism is equipped with a parser that performs in polynomial time with an improved parsing complexity over its non-spatial predecessor, i.e. the Reserved Graph Grammar. With the extended expressive power, the formalism is suitable for many user interface applications. The work is published in ACM Transactions on Computer-Human Interactions, and the research manuscript Visual Languages and Applications to be published by Springer in April 2007.

Dr. Bastani

Dr. Bastani has been a Professor in the Computer Science Department at UTD since 1997. He is the Director of the UTD Embedded Software Center established in 2000 with funding from Alcatel USA and Texas Instruments. Dr. Bastani received research support from a number sources in 2006. He has also been instrumental in setting up the Software Engineering Consortium among North Texas Universities.

Dr. Cangassu

The software development process is currently based on ad-hoc approaches and in the bestcase scenario on best practice guidelines. However, what works to improve the controllability and performance of the process in one company does not necessarily work for another company. In the last four years Dr. Cangassu has worked on the development of general mathematical models to capture the dominant aspect of one phase of the software development process, the software testing process. The availability of the models allows for the proper control of the process and the accurate estimations of completion time and required effort. The models have been validated using data from companies such as Sun Microsystems and RazorFish. The developed theory lays a mathematical foundation for the control of software development processes, which constitutes a significant step forward.

Dr. Chung

Dr. Chung's work on research on non-functional requirements has been adapted and adopted by many researchers, and cited widely in the area of software engineering. The citation index

(<http://citeseer.ist.psu.edu/cs?cs=1&q=Lawrence+Chung&submit=Documents&co=Citations&cm=50&cf=Any&ao=> shows that the number of citations has almost doubled in the last several years.

7.3 Research Activities or Publications:

GeoSENS: geo-based sensor network secure communication protocol. Scott C.-H. Huang, Maggie X. Cheng and Ding-Zhu Du. Computer Communication 29:4 (2006) 456-461.

Connected Dominating Sets in Disk Graphs with Bidirectional Links. My T. Thai and Ding-Zhu Du. IEEE Communications Letters, 10 : 3 (2006).

On the Construction of a Strongly Connected Broadcast Arborance with Bounded Transmission Delay. Yingshu Li, My T. Thai, Feng Wang and Ding-Zhu Du. IEEE Transactions on Mobile Computing, 5:10 (2006) 1460-1470.

A new construction of transversal designs. Ding-Zhu Du Frank K. Hwang, Weili Wu and Ty Znati. Journal of Computational Biology, 13 (2006) 990-995.

Genetic Networks: Processing Data, Regulatory Network Modeling, and their Analysis. My T. Thai, Zhipeng Cai, and Ding-Zhu Du. J. Optimization Methods and Software on Optimization, 22 (2007) 169-185.

Connected Dominating Sets in Wireless Networks with Different Transmission Ranges. My T. Thai, Feng Wang, Dan Liu, Shiwei Zhu, and Ding-Zhu Du. IEEE Transactions on Mobile Computing 2007.

2-Connected Virtual Backbone in Wireless Networks. Feng Wang, My T. Thai, and Ding-Zhu Du. IEEE Transactions on Wireless Communications. 2007.

Relay sensor placement in wireless sensor networks. Xiuzhen Cheng, Ding-Zhu Du, Lusheng Wang and Baogang Xu. Wireless Networks. 2007.

Strongly Connected Dominating Sets in Wireless Sensor Networks with Unidirectional Links. Ding-Zhu Du, My T. Thai, Yingshu Li, Dan Liu and Shiwei Zhu. Proceedings of 8th Asia Pacific Web Conference (APWeb). Harbin, China, (January 16-18, 2006) 13-24

$O(\log n)$ -Localized Algorithms on the Coverage Problem in Heterogeneous Sensor Networks. My T. Thai, Yingshu Li, Feng Wang, and Ding-Zhu Du. Proceedings of the 26th IEEE International Performance Computing and Communications Conference (IPCCC 2007)}. April, 2007.

A. Farago, "On the Fundamental Limits of Topology Control in Ad Hoc Networks", accepted to the journal Algorithmica.

A. Farago, "Efficient Blocking Probability Computation of Complex Traffic Flows for Network Dimensioning", accepted to the journal Computers and Operations Research, Special Issue on Telecommunication Network Engineering.

"Meshless Thin-shell Simulation Based on Global Conformal Parameterization", X. Guo, X. Li, Y. Bao, X. Gu, and H. Qin. Journal Title italicized 99 0 IEEE Transactions on Visualization and Computer Graphics 12 3 (2006) 375-385

"Surface Completion for Shape and Appearance", S. Park, X. Guo, H. Shin, and H. Qin The Visual Computer (International Journal of Computer Graphics) 22 3 (2006) 168-180

Kevin W. Hamlen, Greg Morrisett, and Fred B. Schneider. Computability Classes for Enforcement Mechanisms. ACM Transactions on Programming Languages And Systems (TOPLAS), 28(1), January 2006, 175-205.

William A. Hamlen and Kevin W. Hamlen. A Closed System of Production Possibility and Social Welfare. Computers in Higher Education Economics Review (CHEER), 18, December 2006.

Satisfying Information Needs with Multi-Document Summaries S. Harabagiu, A. Hickl, F. Lacatusu Information Processes and Management, to appear February 2007

COGEX: A Semantically and Contextually Enriched Logic Prover for Question Answering D. Moldovan, C. Clark, S. Harabagiu and D. Hodges Journal of Applied Logic Vol. 5 1, March 2007 Elsevier (2006) 49-69

"Analysis and Implementation of Look-Ahead Window Contention Resolution with QoS Support in Optical Burst-Switched Networks," F. Farahmand and J. P. Jue, IEEE Journal on Selected Areas in Communications, 24 12 (December 2006) 81-93.

"Protection in Multigranular Waveband Networks," S. Varma and J. P. Jue, OSA Journal of Optical Networking, 5 11 (November 2006) 790-806.

"Shared Fiber Delay Line Buffers in Asynchronous Optical Packet Switches," T. Zhang, K. Lu, and J. P. Jue, IEEE Journal on Selected Areas in Communications, 24 4 (April 2006) 118-127.

Jaideep Vaidya, Murat Kantarcioglu and Chris Clifton, "Privacy Preserving Naive Bayes Classification" The VLDB Journal, VLDB Endowment, to appear.

Chris Clifton, Ananth Iyer, Richard Cho, Wei Jiang, Murat Kantarcioglu, and Jaideep Vaidya, "An Approach to Identifying Beneficial Collaboration Securely in Decentralized Logistics Systems", Management & Service Operations Management, INFORMS, Linthicum, Maryland, to appear

"Automatic Image Annotation and Retrieval using Weighted Feature Selection", Lei Wang and Latifur Khan Multimedia Tools and Applications Journal, Vol. 29, No. 1, Page 55-71, Springer (April 2006).

"Real-time Classification of Variable length Multi-attribute Motion Data", Chuanjun Li, Latifur Khan, and

- Balakrishnan Prabhakaran International Journal of Knowledge and Information Systems (KAIS), Vol. 10, No. 2, Page 163-183, Springer-Verlag (August 2006).
- "Secure Knowledge Management: Confidentiality, Trust, and Privacy" Elisa Bertino, Latifur Khan, Ravi Sandhu, and Bhavani Thuraisingham, IEEE Transactions on Systems, Man and Cybernetics, Part A, A Special Issue on Secure Knowledge Management, Vol. 36, No. 3, Page 429-438, (May 2006).
- "A Repository for Component-Based Embedded Software Development", Tong Gao, Hui Ma, I-Ling Yen, Latifur Khan, and Farokh Bastani, International Journal of Software Engineering & Knowledge Engineering, Vol. 16, No. 4, Page 523- 552, World Scientific Publishing Co., Singapore (August 2006).
- "Standards for Image Annotation Using Semantic Web", Latifur Khan, Computer Standards and Interface Journal, Vol. 29, No. 2, Page 196-204, Elsevier Publishing, North Holland, (February 2007).
- "Standards for Secure Data Sharing Across Organizations", Douglas Harris, Latifur Khan, Raymond Paul, and Bhavani Thuraisingham, Computer Standards and Interface Journal, Vol. 29, No. 1, Page 86-96, Elsevier Publishing, North Holland (January 2007).
- Yang Liu, Elizabeth Shriberg, Andreas Stolcke, Dustin Hillard, Mari Ostendorf, and Mary Harper, "Enriching Speech Recognition with Automatic Detection of Sentence Boundaries and Disfluencies", IEEE Transactions on Audio, Speech, and Language Processing, V14(5), pp 1526-1540, September, 2006.
- Yang Liu, Nitesh Chawla, Mary Harper, Elizabeth Shriberg, and Andreas Stolcke, "A Study in Machine Learning from Imbalanced Data for Sentence Boundary Detection in Speech", Computer Speech and Language, V20(4), pp 468-494, 2006.
- Yanxiong Peng, Wenyan Li and Ying Liu. A Hybrid Approach for Biomarker Discovery from Microarray Gene Expression Data. Cancer Informatics, 2: 301-311, 2006.
- MAQC Consortium. The MicroArray Quality Control (MAQC) project shows inter- and intraplatform reproducibility of gene expression measurements. Nature Biotechnology, 24 (9): 1151-1161, 2006.
- Ying Liu, Shamkant B. Navathe, Alex Pivoshenko, Venu Dasigi, Ray Dingedine, and Brian J. Ciliac. (2006) Text Analysis of MEDLINE for Discovering Functional Relationships among Genes: Evaluation of Keyword Extraction Weighting Schemes. International Journal of Data Mining and Bioinformatics. 1:88-110.
- Ying Liu. (2006) Serum Proteomic Pattern Analysis for Early Cancer Detection. Technology in Cancer Research and Treatment, 5: 61-66.
- DIVAs: Illustrating an Abstract Architecture for Agent-Environment Simulation Systems R. Z. Mili, E. Oladimeji and R. Steiner, Journal of Multi Agent and Grid Systems, Special issue on Agent-Oriented Software Development Methodology, Number 4, Volume 2, 2006
- An Efficient Algorithm for Detecting a Locally Stable Predicate in a Distributed Computation. Ranganath Atreya, Neeraj Mittal, Ajay D. Kshemkalyani, Vijay K. Garg and Mukesh Singhal. Journal of Parallel and Distributed Computing (JPDC) (Accepted for Publication) (December 2006)
- "A Quorum-Based Group Mutual Exclusion Algorithm for a Distributed System with Dynamic Group Set", Ranganath Atreya, Neeraj Mittal and Sathya Peri, IEEE Transactions on Parallel and Distributed Systems (TPDS) (Accepted for Publication) (December 2006)
- "Improving the Efficacy of a Termination Detection Algorithm", Sathya Peri and Neeraj Mittal. Journal of Information Science and Engineering (JISE) (Accepted for Publication) (November 2006).
- "A Delay-Optimal Group Mutual Exclusion Algorithm for a Tree Network", Vinay Madenur and Neeraj Mittal, Journal of Information Science and Engineering (JISE) (Accepted for Publication) (October 2006).
- "Timestamping Messages and Events in a Distributed System using Synchronous Communication", Vijay K. Garg, Chakraborty Skawrananond and Neeraj Mittal, Distributed Computing (DC) (Accepted for Publication) (October 2006)
- "Automatic Discovery for Part-Whole Relations", R. Girju, A. Badulescu, and D. Moldovan, Computational Linguistics, 32 1(March 2006) 83-135, ACL, 2006
- "COGEX: A semantically and contextually enriched logic prove for question answering", Dan Moldovan, Christine Clark, Sanda Harabagiu, Daniel Hodges, Journal of Applied Logic Vol. 5 1 (March 2007) 49-69, Elsevier, 2006
- "Unsupervised Morphological Parsing of Bengali", Sajib Dasgupta and Vincent Ng, Language Resources and Evaluation: Special Double-Issue on Asian Language Technology, 2007.
- "Partial Fuzzy Query Resolution for Animation Authoring", Phani S Kotharu and B. Prabhakaran, to appear in the ACM Transactions on Multimedia Computing, Communications, and Applications (TOMCCAP), Vol.4, Issue 2, May 2008.
- "Segmentation and Recognition of Motion Streams by Similarity Search", Chuanjun Li, S. Q. Zheng and B. Prabhakaran, to appear in the ACM Transactions on Multimedia Computing, Communications and Applications (ACM TOMCCAP), Vol. 3(3), August 2007.
- "Motion Stream Segmentation and Recognition by Classification", Chuanjun Li, P. R. Kulkarni and B. Prabhakaran, to appear in Multimedia Tools and Applications (MTAP), Springer.

- "Animation Toolkit Based on Database Approach for Reusing Motions and Models", Akanksha, Z. Huang, B. Prabhakaran, and C.R. Ruiz, to appear in *Multimedia Tools and Applications*, Springer, Volume 32, Number 3 / March, 2007, pp. 293-327.
- "Middleware for Streaming 3D Progressive Meshes over Lossy Networks", Hui Li, Ming Li, B. Prabhakaran, *ACM Transactions on Multimedia Computing, Communications, and Applications (TOMCCAP)*, Vol. 2, Issue 4, November 2006, pp. 282 - 317.
- "End-to-end QoS Framework for Heterogeneous Wired-cum-Wireless Networks", Ming Li, Hua Zhu, Imrich Chlamtac, B. Prabhakaran, *ACM/Springer Wireless Networks (WINET)* Volume 12, Number 4 / August, 2006, pp. 439-450.
- "Indexing of Motion Capture Data for Efficient and Fast Similarity Search", Chuanjun Li and B. Prabhakaran, *Journal of Computers (JCP)*, Academy Publisher, Vol. 1(3), pp. 35-42, June 2006.
- "Load balanced agent activation for value added network services", Gong, K. Sarac, O. Daescu, B. Raghavachari, and R. Jothi, *Computer Communications* 29 11 (2006) 1905-1916
- "Greedy Methods", Samir Khuller, Balaji Raghavachari, and Neal Young, To appear in "Approximation Algorithms and Metaheuristics," Teofilo F. Gonzalez (ed.), CRC Press, 2006
- "Practical Utilities for Monitoring Multicast Service Availability", Pavan Namburi, Kamil Sarac, and Kevin C. Almeroth *Computer Communications Journal*, 29,10, (June 2006) 1675-1686.
- "Load-Balanced Agent Activation for Value-Added Network Services", Chao Gong, Kamil Sarac, Ovidiu Daescu, Balaji Raghavachari, and Raja Jothi *Computer Communications Journal*, 29,11, (July 2006) 1905-1916
- C. Chantapornchai, W. Surakumpolthorn, and E. H.-M. Sha, "Design Exploration with Imprecise Latency and Register Constraints," in *IEEE Transactions on Computer Aided Design of Integrated Circuits and Systems (TCAD)*, Vol 25, No. 12, Dec. 2006, pp. 2650 -2662.
- T. O'Neil and E. H.-M. Sha, "Time-Constrained Loop Scheduling with Minimal Resources," in *Journal of Embedded Computing (JEC)*, Vol. 2, No. 1, October 2006, pp. 103 - 117.
- C. Xue, Z. Shao, Q. Zhuge, B. Xiao, M. Liu, and E. H.-M. Sha, "Optimizing Address Assignment for Scheduling DSPs with Multiple Functional Units," in *IEEE Transactions on Circuits and Systems*, Vol. 53, No. 9, September 2006, pp. 976 - 980.
- Z. Shao, J. Cao, K. Chen, C. Xue, and E. H.-M. Sha, "Hardware/software Optimization for Array & Pointer Bound Checking Against Buffer Overflow Attacks," in *Journal of Parallel Distributed Computing*, Vol. 66, No. 9, September 2006, pp. 1129 - 1136.
- Q. Zhuge, C. Xue, Z. Shao, M. Liu, M. Qiu and E. H.-M. Sha, "Design Optimization and Space Minimization Considering Timing and Code Size via Retiming and Unfolding," in *Journal of Microprocessors and Microsystems*, Vol. 30, Issue 4, June 2006, pp. 173-183.
- Z. Shao, Q. Zhuge, M. Liu, C. Xue, E. H.-M. Sha and B. Xiao, "Algorithms and Analysis of Scheduling for Loops with Minimum Switching," in *International Journal of Computational Science and Engineering (IJCSSE)*, Vol. 2, May 2006, pp. 88-97.
- K. Chen and E. H.-M. Sha, "The Fat-Stack and Universal Routing in Interconnection Networks," in *Journal of Parallel and Distributed Computing*, Vol. 66, No. 5, May 2006, pp. 705-715.
- Z. Shao, C. Xue, Q. Zhuge, M. Qiu, B. Xiao and E. H.-M. Sha, "Security Protection and Checking for Embedded System Integration Against Buffer Overflow Attacks via Hardware/Software," in *IEEE Transactions on Computers*, Vol. 55, No. 4, April 2006, pp. 443 - 453.
- Z. Shao, C. Xue, Q. Zhuge, B. Xiao and E. H.-M. Sha, "Loop Scheduling with Timing and Switching-Activity Minimization for VLIW DSP," in *ACM Transactions on Design Automation of Electronic Systems*, Vol. 11, No. 1, Jan. 2006, pp. 165 - 185.
- C. Xue, Z. Shao, M. Liu, M. Qiu and E. H.-M. Sha, "Optimizing Nested Loops with Iterational and Instructional Retiming," Accepted in *Journal of Embedded Computing (JEC)*, May 2006.
- C. Xue, Z. Shao, and E. H.-M. Sha, "Maximizing Parallelism for Nested Loops via Loop Striping," Accepted in *Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology*, Dec. 2006.
- Z. Shao, M. Wang, Y. Chen, C. Xue, M. Qiu, L. T. Yang and E. H.-M. Sha, "Real-Time Dynamic Voltage Loop Scheduling for Multi-Core Embedded Systems," Accepted in *IEEE Transactions on Circuits and Systems*, Nov. 2006.
- M. Qiu, C. Xue, Z. Shao, M. Liu and E. H.-M. Sha, "Energy Minimization for Heterogeneous Wireless Sensor Networks," Accepted in *Journal of Embedded Computing (JEC)*, Sept. 2006.
- M. Qiu, Z. Jia, C. Xue, Z. Shao and E. H.-M. Sha, "Voltage Assignment with Guaranteed Probability Satisfying Timing Constraint for Real-time Multiprocessor DSP," in *The Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology (JVLSI)*, February, 2007, 19 pages.
- D. Cranston, I. H. Sudborough. "Bounds for Cut-and-Paste Sorting of Permutations" (with D. Cranston, D. West), to appear in *Discrete Mathematics*.
- Efficient Minimum-Cost Bandwidth-Constrained Routing in Wireless Sensor Networks", M. Patel, R.

- Chandrasekaran, and S. Venkatesan, Special Issue on "Wireless Networks and Pervasive Computing, Journal of Pervasive Computing and Communications (JPCC), vol 2, no 2, 2006.
- M. Patel, R. Chandrasekaran, and S. Venkatesan, Improved quasi path restoration in mesh networks, IEEE/ACM Transaction on Networks (to appear)
- Kuehnel, R.; Theiler, J.; Yuke Wang, "Parallel random number generators for sequences uniformly distributed over any range of integers", IEEE Transactions on Circuits and Systems I: Regular Papers, Volume 53, Issue 7, July 2006 Page(s):1496 – 1505
- New Algorithm for Computing Cube on Very Large Compressed Data Sets, Weili Wu, Hong Gao, Jianzhong Li, IEEE Transactions on Knowledge and Data Engineering (TKDE), 18(12): 1667-1680 (2006).
- Localized Outlying and Boundary Data Detection in Sensor Networks, Weili Wu, Xiuzhen Cheng, Min Ding, Kai Xing, and Ping Deng, accepted by IEEE Transactions on Knowledge and Data Engineering (TKDE).
- Mining maximal hyperclique pattern: A hybrid search strategy, Yaochun Huang, Hui Xiong, Weili Wu, Ping Deng, Zhongnan Zhang, Information Sciences, 177(3): 703-721 (2007).
- Decoding Algorithms in Pooling Designs with Inhibitors and Error-Tolerance, Ping Deng, David MacCallum, My T. Thai, and Weili Wu, accepted by International Journal of Bioinformatics Research and Applications (IJBRA).
- Non-unique Probe Selection and Group Testing, Feng Wang, Hongwei Du, Xiaohua Jia, Ping Deng, and Weili Wu, accepted by Theoretical Computer Science.
- Coverage Breach Problems in Bandwidth Constrained Sensor Networks, M. X. Cheng, L. Ruan, W. Wu, accepted by ACM Transactions on Sensor Networks.
- Energy-efficient Broadcast and Multicast Routing in Multihop Ad Hoc Wireless Networks, Xiaoyan Cheng, Jianhua Sun, Manki Min, Yingshu Li and Weili Wu, accepted by Wireless Communications and Mobile Computing (WCMC), Vol 6(2): 213-223 (2006).
- On Error-Tolerant DNA Screening, Weili Wu, Yaochun Huang, Xiao Huang and Yingshu Li, Discrete Applied Mathematics, Vol. 154(12): 1753-1758 (2006).
- Minimum connected dominating sets and maximal independent sets in unit disk graphs, Weili Wu, Hongwei Du, Xiaohua Jia, Yingshu Li and Scott Huang, Theoretical Computer Science, Volume 352(1-3): 1-7 (March 2006).
- A Robust On-demand Path Key Establishment framework via Random Key Pre-distribution for Wireless Sensor Networks, Guanfeng Li, Hui Ling, Taieb Znati, and Weili Wu, EURASIP Journal on Wireless Communications and Networking, Vol 2006(2006): 1-10.
- Construction of d(H)-disjunct matrix for group testing in hypergraphs, Hong Gao, F. K. Hwang, My T. Thai, Weili Wu, Taieb Znati, Journal of Combinatorial Optimization, Vol 12(3): 297-301 (2006).
- Improving construction of connected dominating set with Steiner trees in wireless sensor networks, Manki Min, Xiao Huang, Scott Huang and Weili Wu, Journal of Global Optimization, Vol 35(1): 111-119 (2006).
- "Rapid goal-oriented automated software testing using MEA-graph planning," Manish Gupta, Jicheng Fu, Farokh Bastani, I-Ling Yen, Latifur Khan, Accepted by Software Quality Journal, Springer Netherlands.
- "Preference update for E-commerce applications: Model, language, and processing," Peng Li, I-Ling Yen, and Zhonghang Xia, Accepted by Electronic Commerce Research, Springer Netherlands.
- "A flexible content adaptation system using a rule-based approach," Jiang He, Tong Gao, Wei Hao, I-Ling Yen, Farokh Bastani, IEEE Transactions on Knowledge and Data Engineering, Vol. 19, No. 1, January 2007, pp. 127-140.
- "Extending proxy caching capability: Issues and performance," Wei Hao, Jicheng Fu, Jiang He, I-Ling Yen, Farokh Bastani, Ingray Chen, World Wide Web Journal, Springer Netherlands, Vol. 9, No. 3, October 2006, pp. 253-275.
- "QoS analysis for component-based embedded software: Model and methodology," Hui Ma, I-Ling Yen, Jia Zhou, Kendra Cooper, Journal of Systems and Software, Elsevier, Vol. 79, No. 6, June 2006, pp. 859-870.
- "An integrated admission control scheme for the delivery of streaming media," Zhonghang Xia, I-Ling Yen, Donglei Du, and Peng Li, Journal of Parallel and Distributed Computing, Elsevier, Vol 66, No. 3, March 2006, pp. 334-344.
- "A repository for component-based embedded software development," Tong Gao, Hui Ma, I-Ling Yen, Latifur Khan, and Farokh Bastani, International Journal of Software Engineering and Knowledge Engineering, Vol. 16, No. 4, August 2006, pp. 523-552.
- "Admission control algorithms for revenue optimization with QoS guarantees in mobile wireless networks," Ing-Ray Chen, O. Yilmaz, and I-Ling Yen, Journal of Parallel and Distributed Computing, Elsevier, Vol 66, No. 3, March 2006, pp. 334-344.
- "Replica placement algorithms for mobile transaction systems," Manghui Tu, Peng Li, Liangliang Xiao, I-Ling Yen, Farokh Bastani, IEEE Transactions on Knowledge and Data Engineering, Vol. 18, No. 7, July 2006, pp. 954 – 970.
- M.K. Qiu, K. Zhang, and M.L. Huang, Usability in Mobile Interface Browsing, Web Intelligence and Agent Systems – An International Journal, Vol.4, No.1, 2006, IOS Press, 43-59.

- X. Zeng, Y. Wang, and K. Zhang, Computation of Adalines' Sensitivity to Weight Perturbation, *IEEE Transactions on Neural Networks*, Vol.17, No.2, March 2006, 515-519.
- J. Kong, K. Zhang, and X. Zeng, Spatial Graph Grammars for Graphical User Interfaces, *ACM Transactions on Computer-Human Interaction*, Vol.13, No.2, June 2006, 268-307.
- G.L. Song, J. Kong, and K. Zhang, AutoGen: Easing Model Management Through Two Levels of Abstraction, *Journal of Visual Languages and Computing*, Vol.17, No.6, 2006, Elsevier Science Inc., New York, 508-527.
- J. Dong, Y. Sun, S. Yang, and K. Zhang, Dynamic Web Service Composition Based on OWL-S, *Science in China F: Information Sciences*, Vol.49, No.6, December 2006, Science Press/Springer-Verlag, 843-863.
- M.A. Orgun, L. Xue, and K. Zhang, A Multi-Versioning Scheme for Intention Preservation in Collaborative Editing Systems, *The Journal of Collaborative Computing*, Springer, 2006 (accepted).
- K. Zhang, From Abstract Painting to Information Visualization, *IEEE Computer Graphics and Applications*, 2007 (accepted).
- Q.V. Nguyen, M.L. Huang, and K. Zhang, A Focus+Context Visualization Technique Using Semi-transparency, *International Journal of Pervasive Computing and Communications*, Troubador Publishing, 2006 (accepted).
- Y. Qian, F. Qiu, and K. Zhang, Visualization Informed Noise Removal and Its Application in Processing High Spatial Resolution Remote Sensing Imagery, *Computers and Geosciences*, 2007 (accepted).
- M. Gupta, J. Fu, F.B. Bastani, L. Khan, and I.-L. Yen, "Rapid goal-oriented automated software testing using MEA-graph planning", To appear in the *Software Quality Journal*, Vol. 15, No. 2, June 2007.
- J. He, T. Gao, W. Hao, I.-L. Yen, and F. Bastani, "A flexible content adaptation system using a rule-based approach," *IEEE Trans. on Knowledge Engineering and Data Engineering*, Vol. 19, No. 1, Jan. 2007, pp. 127-140.
- W. Hao, J. Fu, J. He, I.-L. Yen, F.B. Bastani, I.-R. Chen, "Extending proxy caching capability: Issues and performance," *World Wide Web Journal*, Vol. 9, No. 3, October 2006, pp. 253-275.
- T. Gao, H. Ma, I.-L. Yen, L. Khan, and F.B. Bastani, "A repository for component-based embedded software development," *International Journal of Software Engineering and Knowledge Engineering (IJSEKE)*, Vol. 16, No. 4, Aug. 2006, pp. 523-552.
- M. Tu, P. Li, L. Xiao, I.-L. Yen, F.B. Bastani, "Replica placement algorithms for mobile transaction systems," *IEEE Transactions on Knowledge and Data Engineering*, Vol. 18, No. 7, July 2006, pp. 954-970.
- "The multiroute maximum flow problem revisited", D. Du and R. Chandrasekaran, *Networks*, 47 (2), pp. 81-92 (2006).
- "The Maximum Residual Flow Problem: NP-hardness with Two-arc Destruction", D.Du and R. Chandrasekaran, *Networks*, to appear.
- "Quality System and Software Architectures", L. Chung and N. Subramanian, *Journal of Science of Computer Programming: Special Issue on System/Software Architectures*: 61(1), 2006. pp. 1-3.
- "Representing and Reasoning About Agreements ... More Agreeably", N. Subramanian and L. Chung, *Ius Gentium 12: Special Issue on Agreements*, Univ. Baltimore School of Law, Spring 2006. pp. 205-257.
- "Representing NFRs and FRs: A Goal-Oriented and Use Case-Driven Approach", L. Chung and S. Supakkul, W. Dosch, R. Y. Lee and C. Woo (Eds.), *SERA 2004: Revised Selected Papers*, Lecture Notes in Computer Science 3647/ 2006, pp. 29-41.
- E. Pontelli, K. Villaverde, H. Guo, G. Gupta. Stack Splitting: a Technique for Efficient Exploitation of Search Parallelism on Share-nothing Platforms. *Journal of Parallel and Distributed Computing*. 2006. pp. 1267-1293.
- L. Simon, A. Mallya, A. Bansal, G. Gupta. Coinductive Logic Programming. In *Proc. Int'l Conference on Logic Programming*. 2006. pp. 15-30. Lecture Notes in Computer Science, Springer Verlag. 2006.
- N. Meghanathan and A. Farago, "Comparison of Routing Strategies for Minimizing Energy Consumption in Mobile Ad Hoc Networks", 4th Asian International Mobile Computing Conference (AMOC 2006), Kolkata, India, January 4-7, 2006.
- A Farago, "Towards the Integration of Reliability and Tra±c Engi neering", *International Conference on Communications in Computing (CIC'06)*, Las Vegas, Nevada, June 26-29, 2006, pp. 28-34.
- A Farago, "On the Convergence Rate of Quasi Lumpable Markov Chains", 3rd European Performance Engineering Workshop (EPEW'06), Budapest, Hungary, June 21-22.
- Dan I. Moldovan, Christine Clark, Sanda M. Harabagiu, Daniel Hodges: Cogex: A semantically and contextually enriched logic prover for question answering. *J. Applied Logic* 5(1): 49-69 (2007).
- Marta Tatu, Dan I. Moldovan: A Logic-Based Semantic Approach to Recognizing Textual Entailment. *ACL 2006*.
- Adrian Novischi, Dan I. Moldovan: Question Answering with Lexical Chains Propagating Verb Arguments. *ACL 2006*.
- Elliot Glaysher, Dan I. Moldovan: Speeding Up Full Syntactic Parsing by Leveraging Partial Parsing Decisions. *ACL 2006*.
- Roxana Girju, Adriana Badulescu, Dan I. Moldovan: Automatic Discovery of Part-Whole Relations.

Computational Linguistics 32(1): 83-135 (2006).

Sanda M. Harabagiu, Andrew Hickl, V. Finley Lacatusu: Negation, Contrast and Contradiction in Text Processing. AAAI 2006.

Andrew Hickl, Patrick Wang, John Lehmann, Sanda M. Harabagiu: FERRET: Interactive Question-Answering for Real-World Environments. ACL 2006.

Sanda M. Harabagiu, Andrew Hickl: Methods for Using Textual Entailment in Open-Domain Question Answering. ACL 2006.

Sanda M. Harabagiu, V. Finley Lacatusu, Andrew Hickl: Answering complex questions with random walk models. SIGIR 2006: 220-227.

Mansoor Mohsin, David Cavin, Yoav Sasson, Ravi Prakash, André Schiper: Reliable Broadcast in Wireless Mobile Ad Hoc Networks. HICSS 2006.

Mansi Ramakrishnan Thoppian, S. Venkatesan, Ravi Prakash, R. Chandrasekaran: MAC-Layer Scheduling in Cognitive Radio based Multi-Hop Wireless Networks. WOWMOM 2006: 191-202.

Mansi Ramakrishnan Thoppian, Ravi Prakash: A Distributed Protocol for Dynamic Address Assignment in Mobile Ad Hoc Networks. IEEE Trans. Mob. Comput. 5(1): 4-19 (2006).

Trac N. Nguyen, Dung T. Huynh: Connected d-hop dominating sets in mobile ad hoc networks. WiOpt 2006: 65-72.

João W. Cangussu, Kendra Cooper, W. Eric Wong: Multi Criteria Selection of Components Using the Analytic Hierarchy Process. CBSE 2006: 67-81

João W. Cangussu, Michael Baron: Automatic Identification of Change Points for the System Testing Process. COMPSAC (1) 2006: 377-384

Mohamad S. Bayan, João W. Cangussu: Automatic Stress and Load Testing for Embedded Systems. COMPSAC (2) 2006: 229-233

Syed Waseem Haider, João W. Cangussu: Bayesian Estimation of Defects based on Defect Decay Model: BayesED3M. SEKE 2006: 256-261

Scott D. Miller, Raymond A. DeCarlo, Aditya P. Mathur, João W. Cangussu: A control-theoretic approach to the management of the software system test phase. Journal of Systems and Software 79(11): 1486-1503 (2006)

Jia Zhou, Kendra Cooper, I-Ling Yen, John Linn, Raymond A. Paul: A Software Enhancement System for Embedded Software Development. ISORC 2006: 93-100

Kendra Cooper, Xavier Franch: APLE 1st International Workshop on Agile Product Line Engineering. SPLC 2006: 205-206

Weimin Ma, Kendra Cooper, Lawrence Chung: Component-Aware System Architecting: A Software Interoperability. Software Engineering Research and Practice 2006: 778-784

Lirong Dai, Kendra Cooper: Helping to Meet the Security Needs of Enterprises: Using FDAF to Build RBAC into Software Architectures. Software Engineering Research and Practice 2006: 790-796

7.4 Instructional/Training Activities (presented or received): A Graduate Certificate with a Concentration in Information Assurance will be granted by UTD's CyberSecurity and Emergency Preparedness Institute to both technical and non-technical graduate students completing one core "Information Assurance/Security" course and three existing graduate "technical" and/or "non-technical" courses as below. These courses are taught on a regular basis by faculty members in CS. The IA courses are taught by faculty members who are experts in information assurance (Drs Sha, Thuraisingham, Kantarcioglu, Hamlen, Yen) while the non-core courses are taught by CS faculty at large.

Core "Information Assurance" Courses:

- * o CS 6v81 Data and Applications Security
- * o CS 6324 Information Security
- * o CS 6v81 Cryptography
- * o CS 6v81 Data and Applications Security
- * o CS 6v81 Privacy in Computing
- * o CS 6v81 Introduction to Biometrics
- * o CS 7301 Information Assurance

Selected Graduate Courses:a. Technical Courses

- * § CS 6322 Information Retrieval
- * § CS 6352 Performance of Computer Systems & Networks
- * § CS 6354 Advance Software Engineering
- * § CS 6356 Software Maintenance, Evolution, and Re-Engineering
- * § CS 6357 Software Quality Assurance and Metrics
- * § CS 6360 Database Design

- * § CS 6361 Requirements Engineering
- * § CS 6362 Software Architecture and Design
- * § CS 6367 Software Testing, Validation, and Verification
- * § CS 6368 Telecommunication Network Management
- * § CS 6370 Information Systems Engineering
- * § CS 6371 Advanced Programming Languages
- * § CS 6373 Intelligent Systems
- * § CS 6378 Advanced Operating Systems
- * § CS 6380 Distributed Computing
- * § CS 6386 Telecommunication Software Design
- * § CS 6388 Software Project Planning and Management
- * § CS 6389 Formal Methods and Programming Methodology
- * § CS 6390 Advanced Computer Networks
- * § CS 6392 Mobile Computing Systems
- * § Non-Technical Courses:
- * § MAS 6V10 Information Technology Security and Audit
- * § AIM 6334 Auditing, Assurance and Attestation
- * § AIM 6336 Information Technology Risk Management
- * § AIM 6340 Software Management
- * § AIM 6347 Business Value of Information Technology
- * § AIM 6349 Information Technology Strategy and Control
- * § MIS 6319 Enterprise Resource Computing
- * § MIS 6329 Contemporary Issues in Telecommunications
- * § MIS 6353 Intellectual Property Rights

7.5 Public Service: Dr.Farago

Member, School Personnel Review Committee

Member, Dean's Advisory Committee on Continuity

Member, Intellectual Property Committee

Member, Faculty Hearing Tribunal

Member, Health Professionals Advisory Committee

Member, Ad hoc committee for the tenure case of Dr. Sergey Bereg

Member, Examining Committee for the Ph.D. Qualifying exam on Algorithmic Aspects of Telecommunication Networks, Spring 2006

Chair, Examining Committee for the Ph.D. Qualifying exam on Algorithmic Aspects of Telecommunication Networks, Fall 2006

Chair, Best CS Dissertation Award Committee

Member, CS Graduate Admission Committee

Member, CS TA Selection Committee

Member, CS Annual Review Committee

Director of the Scalable Network Engineering Techniques Laboratory in the Computer Science Department.

Editor of the journal Wireless Networks.

Technical Program Committee member and reviewer of the 5th International Conference on Ad hoc Networks and Wireless (AdHocNow'06)

Technical Program Committee member and reviewer of the Mediterranean Ad Hoc Networking Workshop (MED-HOC-NET'06)

Dr.Guo

Research

Local arrangement chair and treasurer: Ninth ACM Multimedia and Security Workshop, 2007.

Program committee member: Sixth International Workshop on Computer Graphics and Geometric Modeling, 2007.

Paper referee:

IEEE Transactions on Visualization and Computer Graphics

IEEE Computer Graphics and Applications

Eurographics conference

Computer Graphics International conference

Asia-Pacific Workshop on Visual Information Processing
International Workshop on Computer Graphics and Geometric Modeling
Dr. Hamlen
Research:
Reviewer for Science of Computer Programming.
Reviewer for Information Processing Letters.
Reviewer for IEEE Transactions on Dependable and Secure Computing
Teaching:
Group Member, Computer Systems Group
Graduate Advisor (currently 1 PhD student, 1 Masters student)
Dr. Harbagiu
Director Human Language Technology Research Institute
Director for the Center for Emerging Natural Language Applications
Director for the Center for Search Engines and Web Technologies
Search Committee member for UTD VP of Research
Third Year Review Committee for Dr. Liu (School of Management)
Equipment Committee
Colloquium Committee
university committees
Director, Human Language Technology Research Institute
Intelligent Systems Group Coordinator
NSF Panelist
Area Chair Thirtieth Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR-2007)
Area Chair 2007 Human Language Technology Conference/North American Chapter of the Association for Computational Linguistics (HLT/NAACL-2007)
Area Chair Twenty-Ninth Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR-2006)
Area Chair 2006 Conference on Empirical Methods in Natural Language Processing (EMNLP 2006)
Scientific Committee for LREC 2006
Program Committee Member for ACL 2007; AAAI-2006; AAAI-2007; CIKM-2007; HLT/NAACL 2006; EACL 2006
Reviewer for AAAI-2006; HLT-NAACL 2006; EACL 2006
Journal Reviewer for ACM Transaction On Information Systems (TOIS)—6 articles; Artificial Intelligence;
Dr.Jue
Vice-Chair, IEEE Communications Society Technical Committee on Optical Networking, January 2006-Pres.
Technical Program Committee, Globecom 2006, Symposium on Advanced Technologies and Protocols for Optical Networks, San Francisco, CA, November 2006
Technical Program Committee, Globecom 2006, Symposium on Control and Management of High Performance Networks, San Francisco, CA, November 2006
Technical Program Committee, IEEE ICC 2006, Optical Systems and Networks Symposium, Istanbul, Turkey, June 2006
Technical Program Committee, IEEE/CreateNet BroadNets 2006 Optical Symposium, San Jose, CA, October 2006
Technical Program Committee, International Workshop on Optical Burst/Packet Switching (WOBS 2006), San Jose, CA, October 2006
Technical Program Committee, First International Conference on Communications and Networking in China (CHINACOM 2006), Beijing, China, October 2006.
Guest Editor, OSA Journal of Optical Networking, Feature Issue on Waveband Switching, Routing, and Grooming, 2006
Editorial Board, IEEE Communications Surveys & Tutorials
Consultant, Technology Futures Inc.

Dr.Murat

Program Committee Member, Twenty-Second AAAI Conference on Artificial Intelligence (AAAI-07)

Program Committee Member, International Workshop on Privacy Aspects of Data Mining (PADM'06)

Program Committee Member, IEEE International Conference on Data Mining, (ICDM 06)

Program Committee Member, 8th International Conference on Data Warehousing and Knowledge Discovery (DAWAK) 06 Program Committee Member, European Conf. on Principles of Data Mining and Knowledge Discovery (PKDD) '05

Dr.Khan

Director of DBL@UTD, UTD Database Laboratory

Associate Editor of Computer Standards and Interface Journal by Elseiver Publishing.

Guest Editor of International Journal of Knowledge and Information Systems (KAIS), Vol. 10, No. 2, Springer (2006).

Member of IEEE Kanai Award Committee, 2005 and 2006.

Keynote Speech: Matching Words and Pictures: Problems, Application and Progress, 9th International Conference on Computer and Information Technology (ICCIT), 2006.

Program Co-Chair of ACM 6th International Workshop on Multimedia Data Mining (MDM/KDD2005), August 2005, Chicago, IL, USA.

Program Chair of ACM 5th International Workshop on Multimedia Data Mining (MDM/KDD2004), August 2004, Seattle, Washington.

Program Committee Member of 12th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, August 2006, Philadelphia, USA.

Program Committee Member of IEEE International Conference on Data Mining (ICDM), ICDM 2006 December 18 - 22, 2006, Hong Kong.

Program Committee Member of 17th European Conference on Machine Learning and 10th European Conference on Principles and Practice of Knowledge Discovery in Databases, September 2006, Berlin, Germany.

Dr. Yang Liu

Publication committee, Joint Human Language Technology Conference and Annual Meeting of North American Chapter of the Association for Computational Linguistics (NAACL-HLT), 2007.

Program technical committee, International Symposium on Chinese Spoken Language Processing (ISCSLP), 2006.

Area chair, 4th Joint Workshop on Multimodal Interactions and Related Machine Learning Algorithms (MLMI), 2007.

Reviewer: Conferences:

- IEEE/ACL Spoken Language Technology Workshop 2006,
- International Conference on Acoustic, Speech, and Signal Processing (ICASSP), 2007,
- Joint Human Language Technology Conference and Annual Meeting of North American Chapter of the Association for Computational Linguistics (NAACL-HLT), 2007
- International Symposium on Chinese Spoken Language Processing (ISCSLP), 2006.

Dr.Ying Liu

Workshop chair, Applications of Machine Learning in Medicine and Biology, The Fourth International Conference on Machine Learning and Applications (ICMLA'06), Orlando, FL CA, December 14-16, 2006

Program Committee Member, The IASTED International Conference on Computational and Systems Biology (CASB 2006), Dallas TX, November 13-15, 2006

Program Committee Member, IEEE International Conference on Granular Computing (IEEE GrC 2006), Atlanta, GA, May 10-12, 2006

Program Committee Member, International Conference on Data Engineering (ICDE 2006) PhD Workshop, Atlanta, GA, April 3-7, 2006

Program Committee member, International Workshop on Data Mining in Bioinformatics with Sixth 2006 IEEE International Conference on Data Mining (ICDM'06), Hong Kong, December 18-22, 2006

Dr.Mili

Chair and member of the qualifying exam committee for respectively, CS6388 (Software Project Planning and Management) and CS6354 (Advanced Software Engineering), Requirements Engineering

Member of the Committee for the Support of Diversity and Equity.

Contributed to the proposal for the North Texas Net-Centric Software Technology Consortium . This consortium is a "joint venture to collectively develop a premier source of fundamental software research and technology for net-centric systems. To be funded by Universities, federal and state governments, and industry members, the Consortium will promote and undertake fundamental research, education, and technology development for high quality net-centric software systems. "

Participated in meetings with UNT, UTD, UTA, SMU, Raytheon, Lockheed representatives.

Program Committee Member

§ Workshop on Agent-Oriented Software Development Methodology, San Francisco, July 2006.

§ Conference on Software Engineering and Knowledge Engineering (SEKE'06), San Francisco, July 2006.

§ HICSS-40 Mini-track in Software Technology Track, Visual Interactions in Software Artifact, Hawaii, January 2007.

§ International Conference on Software Engineering and Data Engineering, (SEDE'07) to be held in Las Vegas in early July 2007.

Dr. Mittal

Member of Program Committee (Algorithms and Theory Track), IEEE International Conference on Distributed Computing and Systems (ICDCS), 2007

Member of Program Committee, IEEE International Workshop on Assurance in Distributed Systems and Networks (ADSN), 2006

Reviewer for:

IEEE Transactions on Parallel and Distributed Systems (TPDS)

IEEE Transactions on Software Engineering (TSE)

Journal of Parallel and Distributed Computing (JPDC)

IEEE International Conference on Distributed Computing Systems (ICDCS)

IEEE International Workshop on Assurance in Distributed Systems and Networks (ADSN)

International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS)

Annual European Symposium on Algorithms (ESA)

International Conference on Information Technology: New Generations (ITNG)

6 of 6

Dr.Moldovan

NSF Panelist

Scientific Committee IEEE 2006 Workshop on Spoken Language Technology

Reviewer for EACL 2006; EMNLP 2006; HLT/NAACL 06; ICOS-5;

Reviewer for International Journal on Artificial Intelligence Tools (IJAIT) article

Program Committee Member: Several Conferences

7.6 Other External Activities:

N. Meghanathan and A. Farago, "Comparison of Routing Strategies for Minimizing Energy Consumption in Mobile Ad Hoc Networks", 4th Asian International Mobile Computing Conference (AMOC 2006), Kolkata, India, January 4-7, 2006.

A Farago, "On the Convergence Rate of Quasi Lumpable Markov Chains", 3rd European Performance Engineering Workshop (EPEW'06), Budapest, Hungary, June 21-22, 2006. Published in the Springer Series LNCS 4054, pp. 138-147.

A Farago, "Speeding Up Markov Chain Monte Carlo Algorithms", International Conference on Foundations of Computer Science (FCS'06), Las Vegas, Nevada, June 26-29, 2006, pp. 102-108.

H. Wang and A. Farago, "On-line Algorithm for Server Selection of Video Streaming over P2P Networks", International Conference on Communications in Computing (CIC'06), Las Vegas, Nevada, June 26-29, 2006, pp. 121-127.

"Harmonic Volumetric Mapping for Solid Modeling Applications", X. Li, X. Guo, H. Wang, Y. He, X. Gu, and H. Qin. Proceedings of ACM Symposium on Solid and Physical Modeling. Beijing, China, June, 2007, to appear

"Harmonic Volumetric Mapping for Solid Modeling Applications", X. Li, X. Guo, H. Wang, Y. He, X. Gu, and H. Qin. Proceedings of ACM Symposium on Solid and Physical Modeling. Beijing, China, June, 2007, to appear

"An Answer Bank for Temporal Inference", S. Harabagiu and A. Bejan Proceedings of the 5th International Conference on Language Resources and Evaluation LREC Genoa, Italy, (May 2006) 741-746

"Impact of Question Decomposition on the Quality of Answer Summaries", F. Lacatusu, A. Hickl, S. Harabagiu Proceedings of the 5th International Conference on Language Resources and Evaluation LREC Genoa, Italy, (May

2006) 1147-1152

"FERRET: Interactive Question-Answering for Real-World Environments", Hickl, P. Wang, J. Lehmann, S. Harabagiu Proceedings of the COLING/ACL 2006 Interactive Presentation Session Sydney, Australia, (July 2006) 25-28

"Methods for Using Textual Entailment in Open-Domain Question Answering", S. Harabagiu, A. Hickl, Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics (COLING/ACL-2006) Sydney, Australia (July 2006) 905-912

"Negation, Contrast and Contradiction in Text Processing", S. Harabagiu, A. Hickl, F. Lacatusu, Proceedings of the twenty-First National Conference on Artificial Intelligence (AAAI-2006) Sydney, Australia, (July 2006) 755-762

"Using Scenario Knowledge in Open-Domain Question Answering", Sanda Harabagiu and Andrew Hickl, Proceedings of the Task-Focused Question-Answering and Summarization Workshop Sydney, Australia (July 2006) 32-39

"Answering Complex Questions with Random Walk Models", S. Harabagiu, F. Lacatusu, A. Hickl, Proceedings of the 29th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR-2006)

"Fault-tolerant Wireless Access Network Design for Dual-homed Users," X. Huang, J. Wang, V. M. Vokkarane, and J. P. Jue, Proceedings, IEEE Infocom 2006, Barcelona, Spain: April 2006, IEEE (2006).

Li Liu, Murat Kantarcioglu, and Bhavani Thuraisingham, "The Applicability of the Perturbation Model-based Privacy Preserving Data Mining for Real-world Data", International Workshop on Privacy Aspects of Data Mining (PADM'06), Hong Kong, 2006

"Detection and Resolution of Anomalies in Firewall Policy Rules" Muhammad Abedin, Syeda Nessa, Latifur Khan, Bhavani Thuraisingham Proc. 20th IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec 2006), Springer-Verlag, July 2006, SAP Labs, Sophia Antipolis, France, Page 15-29.

"Analysis of Firewall Policy Rule Using Data Mining Techniques", Kororsh Golnabi, Richard Min, Latifur Khan and Al-Shaer Ehab Proc. of /IFIP Network Operations & Management Symposium, (NOMS 2006), April 2006 (2006), Page 305-315, Vancouver, Canada (nominated for best paper award)

Brian Roark, Yang Liu, Mary Harper, Robin Stewart, Matthew Lease, Matthew Snover, Izhak Shafran, Bonnie Dorr, John Hale, Anna Krasnyanskaya, and Lisa Yung, "Reranking for Sentence Boundary Detection in Conversational Speech", International Conference on Acoustic, Speech, and Signal Processing (ICASSP), 2006.

Brian Roark, Mary Harper, Eugene Charniak, Bonnie Dorr, Mark Johnson, Jeremy Kahn, Yang Liu, Mari Ostendorf, John Hale, Anna Krasnyanskaya, Matt Lease, Izhak Shafran, Matt Snover, Robin Stewart, and Lisa Yung, "Sparseval: Evaluation Metrics for Parsing Speech", International Conference on Language Resources and Evaluation (LREC), 2006.

Ann Bies, Stephanie Strassel, Haejoong Lee, Kazuaki Maeda, Seth Kulick, Yang Liu, Mary Harper, and Matthew Lease, "Linguistic Resources for Speech Parsing", International Conference on Language Resources and Evaluation (LREC), 2006.

Yang Liu and Elizabeth Shriberg, "Comparing Evaluation Metrics for Sentence Boundary Detection", To Appear in International Conference on Acoustic, Speech, and Signal Processing (ICASSP), 2007.

"Safe Termination Detection in an Asynchronous Distributed System when Processes may Crash and Recover", Neeraj Mittal, Kuppahalli L. Phaneesh and Felix C. Freiling, International Conference on Principles of Distributed Systems (OPODIS) Bordeaux, France: December 12-15; 10 (2006) 126{141

"Synchronous Distributed algorithms for Node Discovery and Configuration in Multi-Channel Cognitive Radio Networks" (Brief Announcement), Srinivasan Krishnamurthy, R. Chandrasekaran, Neeraj Mittal and S. Venkatesan, International Symposium on Distributed Computing (DISC) Stockholm, Sweden: September 18-20; European Association for Theoretical Computer Science (EATCS) 20 (2006) 572-574

"Efficient Grammar Generation and Tuning for Interactive Voice Response Applications", Ellis Cave, Mithun Balakrishna, Dan Moldovan, Proceedings of the International Conference on Acoustics, Speech and Signal Processing, Toulouse, France, May, 2006, ICASSP 2006, IEEE (2006) 1109-1112

"N-best List Reranking using Higher Level Phonetic, Lexical, Syntactic and Semantic Knowledge Sources", Mithun Balakrishna, Dan Moldovan, Ellis Cave, Proceedings of the International Conference on Acoustics, Speech and Signal Processing, Toulouse, France, May, 2006, IEEE (2006) 413-416

"Question Answering with Lexical Chains Propagating Verb Arguments"

Adrian Novischi, Dan Moldovan, Proceedings of the 21st International Conference on Computational Linguistics and 44th, Annual Meeting of the ACL, Sydney, Australia, July 2006 ACL 2006 (2006) 897-904

"A Logic-Based Semantic Approach to Recognizing Textual Entailment"

Marta Tatu, Dan Moldovan, Proceedings of the COLING/ACL 2006 Main Conference Poster Sessions, Sydney, Australia, July 2006 COLING/ACL 2006 (2006) 819-826

"Speeding up Full Syntactic Parsing by Leveraging Partial Parsing Decisions", Elliot Glaysher, Dan Moldovan, Proceedings of the COLING/ACL 2006 Main Conference Poster Sessions, Sydney, Australia, July 2006

COLING/ACL 2006 (2006) 295-300

"Unsupervised Word Segmentation for Bangla", Sajib Dasgupta and Vincent Ng Proceedings of the Fifth International Conference on Natural Language Processing (ICON), Hyderabad, India, January 4-6, 2007, Association for Computational, Linguistics.

"Shallow Semantics for Coreference Resolution", Vincent Ng, Proceedings of the Twentieth, International Joint Conference on Artificial Intelligence (IJCAI), Hyderabad, India, January 9-12, 2007, Association for Advancement of Artificial Intelligence.

"Examining the Role of Linguistic Knowledge Sources in the Identification and Classification of Reviews", Vincent Ng, Sajib Dasgupta, and S. M. Niaz Arifin, Proceedings of the COLING/ACL 2006 Main Conference Poster Sessions, Sydney, Australia, July 22-26, 2006, Association for Computational Linguistics.

"Integration of Motion Capture and EMG data for Classifying the Human Motions", Gaurav N. Pradhan, Navzer Engineer, Mihai Nadin, Balakrishnan Prabhakaran, to appear in Proceedings of International Workshop on "Ambient Intelligence, Media, and Sensing (AIMS) 2007, (held along with International Conference on Data Engineering (ICDE), April 20, 2007, Istanbul, Turkey

"Data Hiding based Compression Mechanism for 3D Models", Hui Li, Parag Agarwal, Balakrishnan Prabhakaran, to appear in IEEE Data Compression Conference 2007 (DCC 2007).

"Hierarchical Indexing Structure for 3D Human Motions", Gaurav N. Pradhan, Chuanjun Li, Balakrishnan Prabhakaran, Proceedings of International Conference on Multimedia Modeling Conference (MMM) 2007, pg. 386-396, January 9-12, Singapore.

"Tamper Proofing of 3D motion Data Streams", Parag Agarwal, Balakrishnan Prabhakaran, Proceedings of 13th International Multimedia Modelling Conference 2007 (MMM 2007), Singapore, LNCS 4351 (Part 1) pp. 731-740, January 2007

"Robust Blind Watermarking Mechanism for Motion Data Streams", Parag Agarwal, Ketaki Adi, Balakrishnan Prabhakaran, Proceedings of ACM Multimedia and Security Workshop, Geneva, Switzerland, September 26-27, 2006, pp. 230 – 235.

"Motion Stream Segmentation and Recognition by Classification", Chuanjun Li, P. R. Kulkarni and B.Prabhakaran, Proceedings of the 31st IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2006), Toulouse, France, pp. V-537- V-540, May 2006.

"A Novel Indexing Approach for Efficient and Fast Similarity Search of Captured Motions", Chuanjun Li and B. Prabhakaran, Proceedings of the 10th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2006), Singapore, pp. 689-698, April 2006

"FONet: A Federated Overlay Network for DoS Defense in the Internet" (A Position Paper) Jinu Kurian and Kamil Sarac, Global Internet Symposium, Barcelona, Catalunya, Spain: April 28-29, 2006; (2006)

"Variable Power Broadcasting in Ad Hoc Networks", Avinash Chiganmi, Kamil Sarac, and Ravi Prakash, IEEE International Conference on Communication, Wireless Ad Hoc and Sensor Networks Symposium, Istanbul, Turkey: June 2006; (2006)

"Analytical IP Alias Resolution", Mehmet Gunes and Kamil Sarac, IEEE International Conference on Communication, General Symposium, Istanbul, Turkey: June 2006; (2006)

"Impact of Alias Resolution on traceroute-based Sample Network Topologies", Mehmet Gunes and Kamil Sarac, Paassive and Active Measurements Workshop, Louvain-la-neuve, Belgium: April 5-6, 2007; (2007) (to appear)

M. Qiu, Z. Shao, C. Xue and E. H.-M. Sha, "Energy Minimization with Soft Real-time and DVS for Uniprocessor and Multiprocessor Embedded Systems," in Proc. The 10th IEEE International Conference on Design, Automation and Test in Europe (DATE), Nice, France, April 2007.

M. Qiu, C. Xue, Z. Shao, Q. Zhuge, M. Liu and E. H.-M. Sha, "Efficient Algorithm of Energy Minimization for Heterogeneous Wireless Sensor Network," Proc. 2006 IFIP International Conference on Embedded and Ubiquitous Computing (EUC 2006), Seoul, Korea, August, 2006, pp. 25 - 34.

C. Xue, Z. Shao, M. Liu, M. Qiu and E. H.-M. Sha, "Loop Striping: Maximizing Parallelism for Nested Loops," Proc. 2006 IFIP International Conference on Embedded and Ubiquitous Computing (EUC 2006), Seoul, Korea, August, 2006, pp. 405 - 414.

Hong Kong, Research Grant Council, Competitive Earmarked Research Grant (CERG), CO-PI (with Bin Xiao), CERG B-Q02S, Early Detection and Effective Counteraction of DDoS attacks at the Victim Server Side, HK \$534,000, Jan. 2007 - Dec. 2009 (International Grant)

Noun Choi, Maulin Patel, and S. Venkatesan, "A Full Duplex Multi-channel MAC Protocol for Multi-hop Cognitive Radio Networks," Proc. International Conference on Cognitive Radio Oriented Wireless Networks and Communications (CROWNCOM 2006), Jun 2006, Mykonos, Greece.

Noun Choi and S. Venkatesan, "Eliminating Location Dependent Unfairness in WLANs," Proc. Vehicular Technology Conference (2006 Fall), Sep 2006, Montreal, Canada.

S. Krishnamurthy, R. Chandrasekaran, Neeraj Mittal, S. Venkatesan: Brief Announcement: Synchronous

Distributed Algorithms for Node Discovery and Configuration in Multi-channel Cognitive Radio Networks. Proceedings of DISC 2006, 572-574.

Mining Quantitative Maximal Hyperclique Patterns: A Summary of Results, Yaochun Huang, Hui Xiong, Weili Wu, and Sam Y. Sung, Proceeding of The 10th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2006): 552-556.

A Projected Clustering Algorithm in High Dimensional Space, Ping Deng, Weili Wu, Yaochun Huang, Zhongnan Zhang, Proceeding of the 15th International Conference on Software Engineering and Data Engineering (SEDE), 2006: 286-291.

"An infrastructure for Web services migration for real-time applications," Wei Hao, Tong Gao, I-Ling Yen, Yinong Chen, Ray Paul, IEEE Int'l Symposium on Service-Oriented System Engineering (SOSE), Oct. 2006, pp. 41-48.

"Deductive glue code synthesis for embedded software systems based on code patterns," Jian Liu, Jicheng Fu, Yansheng Zhang, Farokh Bastani, I-Ling Yen, Ann Tai, Savio Chau, IEEE Int'l Symposium on Object and component-oriented Real-time distributed Computing (ISORC), Gyeongju, Korea, April 2006.

"A visualization model for Web sitemaps," Quang Vinh Nguyen, Mao Lin Huang, Kang Zhang, I-Ling Yen, IEEE Conf. on Computer Graphics, Imaging and Visualization (CGIV 2006), Sydney, Australia, July 2006, pp. 12-17.

"A real-time scheduling based framework for traffic coordination systems," Nirav Shah, Farokh B. Bastani, I-Ling Yen, IEEE Int'l Conf on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC), Taiwan, June 2006, pp. 321-325.

"A software enhancement system for embedded software development," Jia Zhou, Kendra Cooper, I-Ling Yen, John Linn, Raymond Paul, IEEE Int'l Symposium on Object and component-oriented Real-time distributed Computing (ISORC), Gyeongju, Korea, April 2006.

J. Dong, S. Yang, and K. Zhang, Model Based Transformation for Design Pattern Evolutions, Proc. 13th Annual IEEE International Conference on the Engineering of Computer Based Systems (ECBS'06), Potsdam, Germany, 27-30 March 2006, 80-89.

J. Kong, G.L. Song, and K. Zhang, A Collaborative Framework for Designers and Developers of Software-Intensive Systems, Proc. 10th International Conference on CSCW in Design (CSCWD'06), Nanjing, China, 3-5 May 2006.

K-B. Zhang, M.A. Orgun, and K. Zhang, Hypothesis Oriented Cluster Analysis in Data Mining by Visualization, Proc. 8th International Working Conference on Advanced Visual Interfaces (AVI'06), Venice, Italy, 23-26 May 2006, ACM Press, 254-257.

P. Kumar, G.L. Song, and K. Zhang, Towards A Unified View of Service-Oriented Web, Proc. 2006 IEEE International Conference on Service Operations and Logistics, and Informatics, Shanghai, China, 21-23 June 2006, IEEE Press, 862-867.

Q. V. Nguyen, M. L. Huang, K. Zhang, and I. L. Yen, A Visualization Model for Web Sitemaps, Proc. 3rd International Conference on Computer Graphics, Imaging and Visualization (CGIV'06), Sydney, Australia, 26-29 July 2006, 12-17.

Q. V. Nguyen, M. L. Huang, Y. Qian, and K. Zhang, A Technique for Visualizing Dihedral Signal of Large Protein Sequences, Proc. 3rd International Conference on Computer Graphics, Imaging and Visualization (CGIV'06), Sydney, Australia, 26-29 July 2006, 6-11.

K.L. Ates, K. Zhang, and B. Prabhakaran, Visual Querying on Human Motion for the Disabled, Proc. 2006 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC'06), Brighton, UK, 4-8 September 2006, IEEE CS Press, 222-223.

M.L. Huang, W. Quan, and K. Zhang, A Fast Convergence Layout Algorithm for Drawing Progressive Marching-Graphs, Proc. Asia-Pacific Workshop on Visual Information Processing (VIP'06), Beijing, China, 7-9 November 2006.

Q. V. Nguyen, M. L. Huang, Y. Qian, I-L. Yen, and K. Zhang, CAVis: A Tool for Collecting, Analyzing and Visualizing Scientific Articles in Information Science, Proc. Asia-Pacific Workshop on Visual Information Processing (VIP'06), Beijing, China, 7-9 November 2006.

G. Padilla, F.B. Bastani, C. Montes de Oca, M.A. Serrano, "Instantiation semantics for Message Sequence Charts," Proc. 7th Mexican International Conference on Computer Science (ENC'06). San Luis Potosi, Mexico, Sept. 200, pp. 191-199.

T. Gao, H. Ma, I.-L. Yen, L. Khan, and F.B. Bastani, "A repository for component-based embedded software development," International Journal of Software Engineering and Knowledge Engineering (IJSEKE), Vol. 16, No. 4, Aug. 2006, pp. 523-552.

N. Shah, F.B. Bastani, I.-L. Yen, "A Real-Time Scheduling Based Framework for Traffic Coordination Systems," IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC2006), Taichung, Taiwan, June 5-7, 2006, pp. 321-325.

J. Liu, J. Fu, Y. Zhang, I.-L. Yen, F.B. Bastani, A. Tai, and S. Chau, "Deductive glue code synthesis for embedded software systems based on code patterns," Proc. 9th IEEE Intl. Symp. on Object and component-oriented Real-time

distributed Computing (ISORC-2006), Gyeongju, Korea, Apr. 2006, pp. 109-116.

R. Chandrasekaran. "Recent Advances in Combinatorial Optimization: Flow Problems and Network synthesis" Indo-US workshop on Computational Optimization and Systems Analysis, IIT Kanpur, February 2007. Colloquium talk.

R. Chandrasekaran. "Graph Labeling: Part I: Trees" at IIT Kanpur Computer Science Department October 2006. Colloquium talk.

R. Chandrasekaran. "Graph Labeling: Part II: General Graphs" at IIT Kanpur Mathematics Department, February 2007. Colloquium talk.

UTD CS Faculty members were Reviewer, Program Chair, Session Chair & General Chair of following international events:

Technical Program Committee, IEEE ICC 2006, Optical Systems and Networks Symposium, Istanbul, Turkey, June 2006

Technical Program Committee, First International Conference on Communications and Networking in China (CHINACOM 2006), Beijing, China, October 2006.

Program Committee Member, 8th International Conference on Data Warehousing and Knowledge Discovery (DAWAK) 06 Program Committee Member, European Conf. on Principles of Data Mining and Knowledge Discovery (PKDD) '05

Program Committee Member of IEEE International Conference on Data Mining (ICDM), ICDM 2006 December 18 - 22, 2006, Hong Kong.

Program Committee Member of 17th European Conference on Machine Learning and 10th European Conference on Principles and Practice of Knowledge Discovery in Databases, September 2006, Berlin, Germany.

Member of Program Committee (Algorithms and Theory Track), IEEE International Conference on Distributed Computing and Systems (ICDCS), 2007

Member of Program Committee, IEEE International Workshop on Assurance in Distributed Systems and Networks (ADSN), 2006

Reviewer for International Journal on Artificial Intelligence Tools (IJAIT) article

Program Committee Member: Seventh International Workshop on Computational Semantics (IWCS-7); Second PASCAL Recognising Textual Entailment Challenge (RTE-2); ICOS-5; Natural Language and Knowledge Representation @ FLAIRS 2006; HLT/NAACL 2006; Journal TAL (Traitement Automatique de la Langue) on Question- Answering;

Member, Program Committee, ACM Multimedia 2006.

Member, Program Committee, ACM Multimedia 2007.

Member, Program Committee, IEEE BroadNets 2007.

Member, Program Committee, International Conference on Multimedia Systems & Applications (IMSA) 2007.

Member, Program Committee, IASTED International Conference on Wireless and Optical Communications (WOC 2007), Montreal, Canada from May 30-June 1, 2007.

Member, Program Committee, International MultiMedia Modeling Conference (MMM) 2007

The Mexican International Conference on Computer Science (ENC 2006), San Luis Potosi, Mexico, September 18-22, 2006

International Conference on Wireless Algorithms, Systems, and Applications (WASA 2006), Xi'an, China, August 15-18, 2006

IEEE International Conference on Pervasive Services 2006 (ICPS), Lyon, France, 26-29 June 2006

The Workshop on End-to-End Monitoring Techniques and Services (E2EMON), Vancouver, Canada, April 3, 2006.

IEEE International Conference on Communication - General Symposium (ICC'06 General Symposium), Istanbul, Turkey, June 11-15, 2006.

International Conference on Computational Science (ICCS), Workshop of Evolution toward Next Generation Internet (ENGI), University of Reading, UK, May 28-31, 2006.

Guest Editor, Special Issue on Ubiquitous Computing, International Journal on Pervasive Computing and Communications (JPCC), 2006 - 2007.

Guest Editor, Special Issue on Design and Programming of Signal Processors for Multimedia Communication, Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology (JVLSI), 2006 - 2007.

Steering Committee Chair of the International Workshop on Embedded Software Optimization (ESO).

Program Committee Chair of the 2006 IFIP International Conference on Embedded And Ubiquitous Computing (EUC 2006), Seoul, Korea, August 2006.

General Committee Co-Chair of the 2006 International Workshop on Embedded Software Optimization (ESO

2006), Seoul, Korea, August 2006.

International Advisory Committee of the 2007 international Workshop on Intelligent Systems and Smart Home (WISH 2007), Niagara Falls, Canada, August 2007.

Steering Committee of the International Workshop on Interactive Multimedia & Intelligent Services in Mobile and Ubiquitous Computing 2007 (IMIS2007), Seoul, Korea, April 2007.

Advisory Committee of the International Conference on Information Security and Computer Forensics (ISCF 2006), Chennai, India, December 2006.

Program Committee of the 27th IEEE Real-Time Systems Symposium (RTSS 2007), Tucson, Arizona, December 2007.

Program Committee of the 19th IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS 2007), Cambridge, Massachusetts, November 2007

Program Committee of the 2007 IEEE/ACM/IFIP International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS 2007), Salzburg, Austria, September 2007.

Program Committee of the Third International Symposium on Information Assurance and Security (IAS07), Manchester, United Kingdom, August 2007.

Program Committee of the IEEE International Conference on Embedded Computer Systems: Architecture, Modeling and Simulation" (IC-SAMOS), Sammos, Greece, July 2007.

Program Committee of the 7th International Conference on Algorithms and Architecture for Parallel Processing (ICA3PP-2007), Hangzhou, China, June 2007.

Program Committee of the 27th IEEE Real-Time Systems Symposium (RTSS 2006), Rio de Janeiro, Brazil, December 2006.

Program Committee of 2006 IEEE/ACM/IFIP International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS 2006), Seoul, Korea, October 2006.

Program Committee of the 5th bi-annual IFIP Conference on Distributed and Parallel Embedded Systems (DIPES 2006), Braga, Portugal, October 2006.

Program Committee of the IEEE International Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC2006), Taichung, Taiwan, June 2006.

Program Committee of the 8th Asia Pacific Web Conference (APWeb), Harbin, China, January 2006

In editorial board of International Journal of Bioinformatics Research and Applications (IJBRA).

In editorial board of International Journal of Knowledge and Information Systems (KAIS).

The Fifth IEEE International Conference on Machine Learning and Applications (ICMLA, 2006).

International Wireless Communications and Mobile Computing Conference (IWCMC 2006)

The International Symposium on Bioinformatics Research and Applications (ISBRA 2007)

International Workshop on Research Challenges in Security and Privacy for Mobile and Wireless Networks (WSPWN 06)

Editor for International Journal on Artificial Intelligence Tools.

General Co-Chair for IEEE High Assurance Systems Engineering (HASE), 2007.

Program Co-Chair for IEEE Service-Oriented Engineering Symposium (SOSE), 2007.

Program Co-Chair for IEEE Symposium on Reliable Distributed Systems (SRDS), 2007.

Program Vice Chair for IFIT International Conference on Embedded and Ubiquitous Computing (EUC), 2007.

Program Committee member for the Embedded Systems: Applications, Solutions, and Techniques Track in ACM SAC 2007.

Program Vice Chair for IEEE Int'l Conference on Sensor Networks, Ubiquitous, and Trustworthy Computing (SUTC), 2006.

Program Committee member for the IEEE International Workshop on Service-Oriented System Engineering (SOSE) 2006

Program Committee member for the Embedded Systems: Applications, Solutions, and Techniques Track in ACM SAC 2006.

Editorial Board of the Journal of Visual Languages and Computing, Elsevier.

Editorial Board of the International Journal of Software Engineering and Knowledge Engineering, World Scientific.

Program Chair of 2007 International Workshop on Visual Languages and Computing (VLC'07), San Francisco, USA, 6-8 September 2007.

7.7 Contributions to UTD:

Homeland security is an important issue in our nation today. Producing students who have advanced knowledge of this vital area is an important mission of the University. The Graduate Certificate in Information Assurance trains

students for handling the computer security part of Homeland security, and directly contributes to the University's mission.

7.8 Top 3 Program / Unit Challenges:

The program has been running smoothly for a number of years. The main challenge to the program is to make sure that we keep teaching a variety of graduate level information assurance related courses. An additional (low priority) challenge is to enhance the program so that individuals can obtain this certificate without enrolling in the Master's program. Enrollment in the MS program is currently a requirement.

7.9 Detailed Resources Needed to Improve and Fulfill Mission: Resources are needed to support current faculty, graduate assistants and operations. Additional resources are needed for student scholarships and for faculty chairs in information assurance and computer security.