

-WITSCS'07-
**Workshop on Information Technologies
and Systems: Challenges and Solutions**

Seminar Series for Egyptian Scholars in USA, Canada, Australia and Japan

On

**Ubiquitous Computing and
Intelligence: Challenges and Solutions**

Faculty of Computer and Information, Cairo University

1-5 July 2007-06-1

Organized by:

Faculty of Computer and Information, Cairo University

&

Egyptian Rough Sets Working Group

<http://www.cba.edu.kw/abo/rough-sets-working-group.htm>

Cairo, Egypt 2007

Welcome Message: From the Dean of Faculty of Computer and Information, Cairo University

On behalf of the Faculty of Computers and Information (FCI) - Cairo University, we would like to welcome you to participate in the summer seminar series for Egyptian Scholars in USA, Canada, Australia and Japan. The objective of this series of seminars is to provide a forum for discussion and interaction among Egyptian scholars in Canada, USA, Europe, Australia and Asia with their colleagues in Egypt to share their research, experience, exchange of ideas and the development of collaborative individual relationships or across their institutions. This is the 2nd time to invite distinguished Egyptian professionals to FCI to give presentations on topics of current interest. Speakers may discuss recently completed or early-stage research that they have undertaken, or report on other types of professional activity. Diversity of topics is essential to meeting the purpose of the Distinguished Seminar Series. The main theme of the July seminars is Ubiquitous Computing and Intelligence: Challenges and Solutions with different special tracks on image processing, Databases for knowledge Discovery, Rough Sets and Geospatial Technologies and Risk Assessment of Software Architectures - New Directions.

The organization of this event would have been impossible without the valuable help of many dedicated people, special thanks to Dr. Aboul ella Hassanien, Associate Professor at Faculty of Computers and Information- Cairo University and the Egyptian rough sets Society President, for his hard work and the great effort he is undertaking to bring these scholars together and to create the link between the Egyptian scholars and FCI. Special thanks for all Egyptian scholars who accepted to join the seminar series and deliver their lectures. We also would like to thank all FCI staff members for their support and follow up especially Professor Reem Bahgat, Vice Dean of Postgraduate Studies and Research at FCI.

We hope you benefit from the seminars and that your participation contributes to your professional development and relationships.

Professor Aly Fahmy

Seminar Program

Time	Title
Monday 2 July	
10:00- 10:15	Multi-View Object Tracking by Student Shireen Youssef Y. Saleh Elhabian, FCI
10:15-10:30	Improving HMM-Based Speech Synthesis Quality by Student Ossama Abdel-Hamid Mohamed, FCI
10:30-11:15	Shape from Shading – Extraction of 3D Information from 2D Images: Recent Advances and Applications by Professor Aly A. Farag
Break 15 min	
11:30-12:15	Software Architecture Risk Assessment by Professor Hany H. Ammar,
12:15-01:00	Measuring the Immeasurable: vulnerability to Natural Hazards and the Role of Geospatial Technologies and Dynamic Simulation Models by Professor Tarek Rashed
Wednesday 4 July	
10:00-10:15	A Proposed Intrusion Detection System for Encrypted Computer Networks by Student Nesreen Kamel
10:15-10:30	Artificial Neural Networks Architecture For Intrusion Detection Systems and Classification of Attacks by Student Marwa Sa'id Sharawi
10:30-11:30	Ubiquitous Services: Goals, Design Principles and Evaluation Professor Mohamed Eltoweissy
11:30-12:30	Data Aggregation and Routing in Wireless Sensor Networks by Professor Ahmed E. Kamal,
Saturday 7 July 2007	
10:00-10:15	Minimizing Privacy Loss in the View Invalidation Problem by Student Hala Mostafa
10:15-11:00	δ, μ-Multicast Overlay Network by Dr. Khaled Ragab
11:00-11:45	Integration of RFID and Sensor Networks: Opportunities and Challenges by Dr. Haitham S. Hamza
Monday 9 July	
10:00-10:15	Cocktail-Party Speech Separation by Student Gehan Mustafa Kamel
10:15-10:30	TBA
10:30-11:30	Professor Tarek Sobh
15 July Sunday	
10:00-10:15	Automated Multi Domain Image Fusion by Student Mohammed Hossny
10:15-10:30	Pattern Discovery in Bio-sequences by Student Waleed Ahmed Abd El-Hamid Abo Hamad
10:30-11:30	Professor Mohamed Fayad
16 July Monday	
10:00- 10:15	TBA
10:15- 11:15	Scheduling Task Graphs for Efficient Utilization of Cluster Computing Environments By Professor Reda Amar
Close	

Theme and Purpose

The objective of this series of seminar is to provide a forum for discussion and interaction among Egyptians scholars in Canada, USA, Europe, Australia and Asia with their colleagues in Egypt to share their research, experience, exchange of ideas and the development of collaborative individual relationships or across their institution. This is the 2nd time to invites distinguished Egyptian professionals to FCI to make presentations on topics of current interest. Speakers may discuss recently completed or early-stage research that they have undertaken, or report other types of professional activity. Diversity of topics is essential to meeting the purpose of the Distinguished Seminar Series. The main theme of the July 2007 seminars is **Ubiquitous Computing and Intelligence: Challenges and Solution**. To have many scholars in the seminar series we have decided to open a few special tracks:

- I. Image Processing and Computer Graphics and It Application
- II. Databases for knowledge Discovery
- III. Rough sets and Applications
- IV. Geospatial technologies (GIS and Remote Sensing) to Urban Environment
- V. Risk Assessment of Software Architectures - New Directions

Student section: We have rearward and give a chance to the Ph.D. students at Faculty of Computer and Information to presents their works in 15 min. Students will learn to present their ideas to an audience of peers and professional scientists. Students will learn to listen and advise one another as scholars pursuing unique research paths within a community of shared inquiry.

Here is the list of Egyptian scholar in USA, Canada, Australia and Japan who love to join and deliver a lecture in his/her summer or winter vacation 2007.

Professor M.E. Fayad	Professor Ahmed E. Kamal
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<p>Computer Engineering San José State University One Washington Square San José, CA 95192-0180 Email: mfayad@sjsu.edu http://www.engr.sjsu.edu/fayad/</p>	<p>Dept. of Elec. & Comp. Eng Ames, Iowa 50011-3060 Iowa State University Phone: (515) 294-3580 Fax: (515) 294-1152 E-mail: kamal@iastate.edu http://www.ee.iastate.edu/~kamal</p>
<p>Professor Hany H. Ammar</p> <p>Office: 739 Engineering Sciences Building, Lane Department of Computer Sc. and Electrical Engineering, West Virginia University, Morgantown, WV 26506, Tel. (304) 293-0405 (ext. 2514) Fax (304) 293-8602 E-mail: hammar@wvu.edu http://www.csee.wvu.edu/~ammar/</p>	<p>Professor Hossam Saad Hassanein,</p> <p>Director, Telecommunications Research Lab School of Computing & Department of Electrical and Computer Engineering Queen's University, Kingston, Ontario, K7L 3N6 Canada Phone: 1-613-533-6052 Fax: 1-613-533-6513 http://www.cs.queensu.ca/~hossam</p>
<p>Professor Dr.-Ing. A. El Saddik</p> <p>Associate Prof., SMIEEE, P.Eng. and Director: Multimedia Communications Research Laboratory (MCRLab). Director: Information Technology Cluster, Ontario Research Network on Electronic Commerce (ORNEC) School of Information Technology and Engineering (SITE) University of Ottawa 800 King Edward, Ottawa, Ontario, Canada, K1N 6N5 Tel: (613) 562-5800 x 6277, Fax: (613) 562-5664 Email: elsaddik@site.uottawa.ca http://www.site.uottawa.ca/~elsaddik http://www.mcrlab.uottawa.ca</p>	<p>Professor Ahmed Helmy</p> <p>Associate Professor of Computer Networks Computer and Information Science and Engineering (CISE) Department Founder and Director: Mobile and Sensor Networks Laboratory (the NOMADS group) University of Florida, Gainesville http://ceng.usc.edu/~helmy/</p>
<p>Dr Mohamed Medhat</p> <p>Research Scientist Tasmanian ICT Centre - CSIRO ICT Centre GPO Box 1538 Hobart TAS 7001 Australia T: +61 3 6232 5538, F: +61 3 6232 5125 http://www.geocities.com/medhatgaber/</p>	<p>Dr. Magy Seif El-Nasr</p> <p>School of Information Science and Technology, The Pennsylvania State University 2T Thomas Building University Park, PA 16802-2117 Email: magy@ist.psu.edu http://faculty.ist.psu.edu/SeifEl-Nasr/</p>
<p>Dr. Sherief Abdallah</p> <p>Institute of Informatics British University in Dubai Knowledge Village, Block 17 Dubai, United Arab Emirates Tel: +971 4 367 1964</p>	<p>Professor Aly Farag</p> <p>Department of Electrical and Computer Engineering University of Louisville, Louisville, KY, 40292 Phone: (502) 852-7510 Fax: (502) 852-1580</p>

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<p>Professor Mohamed Aboutabl,</p> <p>Department of Computer Science, James Madison University ISAT/CS Building, Room 207 701 Carrier Drive - MSC 4103 Harrisonburg, VA 22807 Phone: (540) 568-7589 Fax : (540) 568-2745 e-mail: aboutams@jmu.edu http://www.cs.jmu.edu/faculty/aboutabl.htm</p>	<p>Dr. Tamer Nadeem</p> <p>Siemens Corporate Research, Inc. Audio, Signal Processing, and Wireless Program 755 College Road East Princeton, NJ 08540, USA Voice: (240) 475-3289 Fax: (413) 502-8829 Email: tamer.nadeem@siemens.com http://www.cs.umd.edu/~nadeem</p>
<p>Professor Mohammed Moharrum</p> <p>Computer Science Department, Department of Computer Science Old Dominion University Norfolk, Virginia, 23529, USA. Office Phone: 1-757-683-6001 Ext (6289) Email: mohar_m@cs.odu.edu http://www.cs.odu.edu/~mohar_m</p>	<p>Dr. Khaled Ragab</p> <p>Yonezawa Lab, Department of Computer Science Graduate School of Inf. Science & Tech., The University of Tokyo http://web.yl.is.s.utokyo.ac.jp/~ragab/</p>
<p>Dr. Moustafa Youssef</p> <p>Department of Computer Science University of Maryland College Park, MD 20740 Tel: 301-405-0341 Email: moustafa@cs.umd.edu http://www.cs.umd.edu/~moustafa/</p>	<p>Professor Ikhlas Abdel-Qader, PE</p> <p>Associate Professor and Director Inf. Technology & Image Analysis Center, Electrical and Computer Engineering Dept. College of Engineering and Applied Science Parkview Campus Western Michigan University 1903 W. Michigan Ave. Kalamazoo, MI 49008-5329 Phone: 269-276-3146 Fax: 269-276-3151</p>
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<p>Mohamed Hossam Ahmed, Ph.D., P.Eng., IEEE Senior Member</p> <p>Assistant Professor Faculty of Engineering & Applied Science</p>	<p>Ahmed Tawfik</p> <p>Associate Professor School of Computer Science University of Windsor</p>

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<p>Eiman Elnahrawy, Ph.D Post-doc Fellow Rutgers University and Kordinate LLC. Phone: 732-331-0042 eiman@cs.rutgers.edu http://paul.rutgers.edu/~eiman/</p>	<p>Dr. Sonia Fahmy Associate Professor Department of Computer Science Purdue University Phone: (765) 494-6183 West Lafayette, IN 47907-2107 Fax: (765) 494-0739 E-mail: fahmy@cs.purdue.edu http://www.cs.purdue.edu/homes/fahmy</p>
<p>Professor Mohamed Eltoweissy Associate Professor The Bradley Department of Electrical and Computer Engineering Virginia Tech Virginia Tech - Advanced Research Institute 4300 Wilson Blvd., Suite 750 Arlington, VA 22203 Tel: (703) 387-6029 Fax: (703) 528-5543 Email: toweissy@vt.edu http://www.ari.vt.edu/People/eltoweissy.htm</p>	
<p>Hesham El-Rewini, Ph.D., P.E. Professor and Chairman Dept. of Computer Sc.& Engineering School of Engineering SMU</p>	<p>Professor Reda Ammar, Professor and Department Head U-2155, Computer Science and Engineering Dept University of Connecticut 371</p>

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July Seminar Speakers

Software Architecture Risk Assessment

Professor Hany H. Ammar,

Lecture time: Monday 2 July

Abstract

Risk assessment is an essential part in managing modern software development. Performing risk assessment during the early development phases enhances resource allocation decisions. Subjective risk assessment techniques are human intensive and error-prone. Risk assessment should be based on product attributes that we can quantitatively measure using product metrics. In order to improve the software development process and the quality of software products, we need to be able to build risk analysis models based on data that can be collected early in the development process. The study of software architectures is emerging as an important discipline in software engineering; due to its emphasis on large scale composition of software products, and its support for many emerging paradigms of software development such as product line engineering, component based software engineering, as well as the increasingly prevalent paradigm of software evolution. The shift from the traditional functional view of software development to the architectural view has gained great interest recently with the advent of model driven architectures and the recent advances in the Unified Modeling Language (UML). In this talk, we discuss techniques of risk assessment of software architectures. Several types of risk assessment will be discussed including reliability risk, performance risk and maintainability risk. This work is part of several years of research effort conducted by researchers from the New Jersey Institute of Technology and West Virginia University. This research effort was funded in part by the US National Science Foundation and NASA.

● Biography



Dr. Ammar is a Professor of Computer Engineering in the Department of Computer Science and Electrical Engineering at West Virginia University. He has published over 120 articles in prestigious international journals and conference proceedings. Dr. Ammar is currently Editor in Chief of the [Journal of Computer Science and Engineering, in Arabic](#). In 2004, he co-authored a book entitled [Pattern-Oriented Analysis and Design: Composing Patterns to Design Software Systems](#) published by Addison-Wesley. In 2006, he co-authored a book entitled [Software Engineering: Technical, Organizational and Economic Aspects, an Arabic Textbook](#), and co-edited the Proceedings of the [Second International Conference on Computer Science Practice in Arabic](#). Dr. Ammar has been teaching in the areas of Software Engineering and Computer Architecture since 1987. He has been recently a Principal Investigator on a number of research projects on Software Risk Assessment and Software Architecture Metrics funded by the NASA IV&V Facility and NSF, and a project on Automated Dental Identification Systems funded by NIJ and NSF. Dr. Ammar is a member of the IEEE and the ACM professional organizations. He has served as Chairman and member of Steering Committees and Program Committees of several International Conferences and Symposia. He previously served as the Chairman of the Upper Monongahela Subsection of the Pittsburgh section of the IEEE, a Director of the Pittsburgh section of the IEEE, and the student section advisor of the IEEE Computer Society at WVU.

Measuring the Immeasurable: Vulnerability to Natural Hazards and the Role of Geospatial Technologies and Dynamic Simulation Models

Professor Tarek Rashed

Lecture time: Monday 2 July

Abstract

Although vulnerability is long recognized as an essential concept in hazards research and emergency management, there is little consensus among researchers, planners and disaster managers regarding the best way to undertake vulnerability analysis. Assessing urban vulnerability can therefore generally be regarded as an ill-structured problem. Many of current vulnerability models are divergent in terms of the meaning of vulnerability; hazard-specific; essentially descriptive and not of operational value to disaster managers; and short of metrics to measure and compare vulnerability; and do not include ways to assess sensitivity to policy and mitigation measure. The purpose of this presentation is three-fold: (1) to provide a critical review of the evolution of current analytical models of vulnerability; (2) to examine how geospatial solutions have been used to analyze the vulnerability of society to natural and technological hazards; (3) to report progress of an ongoing research conducted at the University Oklahoma to quantify urban vulnerability to multiple hazards through the integration of geospatial techniques and dynamic urban simulation models.

● Biography



Tarek Rashed is an Assistant Professor of Geographic Information Science and Associate Director of the Center for Spatial Analysis at the University of Oklahoma in the USA. His education is multidisciplinary and includes a B.Sc. in Architecture Engineering (Assiut University), an M.Sc. in Computation and Information Systems (University of Manchester), a postgraduate diploma in Disaster Management (University of Geneva); and a Ph.D. in Geography (San Diego State University/University of California, Santa Barbara). His research and professional work cuts across diverse topics related to geospatial information technologies and their applied uses for the investigation of a variety of urban research and policy questions. Rashed's publication records includes 10 peer-reviewed articles in scholarly journals, 2 articles in professional magazines, 4 book chapters, an edited book, and over 30 presentations and invited talks in international conferences and workshops. He is the recipient of several national and international awards including the Intergraph Young Scholar Award from the University Consortium of Geographic Information Science (UCGIS), a doctoral dissertation improvement award from the U.S. National Science Foundation (NSF), a GIS award from the Urban and Regional Information Systems Association (URISA), a Chevening Scholar award from the British Council, and the International Scholar Award from the Phi Beta Delta society. Rashed's dissertation on the assessment of social vulnerability to urban earthquake hazards using remote sensing and GIS has received the prestigious Gilbert White Award by the Association of American Geographers for the best hazards dissertation/thesis in the U.S. in 2002/2003 and an invitation for a congressional briefing in winter 2003. Rashed has been engaged in several international projects funded by NASA, NSF, USAID, and State of Oklahoma, and has served as a consultant for both the UN Development Programme and the UN Environmental Programme. He is now the Director Elect of the American Society of Photogrammetric Engineering and Remote Sensing for the State of Oklahoma, and the Secretary of the University Consortium of Geographic Information Science.

Data Aggregation and Routing in Wireless Sensor Networks

Professor Ahmed E. Kamal,

Lecture time: Wednesday 4 July

Abstract

A fundamental challenge in the design of Wireless Sensor Networks (WSNs) is to maximize their lifetimes especially when they have a limited and non-replenishable energy supply. To extend the network lifetime, power management and energy-efficient communication techniques at all layers become necessary. This talk addresses the problem of correlated data gathering in WSNs. The objective behind this research is to maximize the network lifetime by utilizing data aggregation and in-network processing techniques. We particularly focus on the joint problem of optimal data routing with data aggregation en route such that the above mentioned objective is achieved. We present the Grid-based Routing and Aggregator Selection Scheme (GRASS), a scheme for WSNs that can achieve low energy dissipation and low latency without sacrificing quality. GRASS embodies optimal (exact) as well as heuristic approaches to find the minimum number of aggregation points while routing data to the BS such that the network lifetime is maximized. Our results show that, when compared to other schemes, GRASS improves system lifetime with acceptable levels of latency in data aggregation and without sacrificing quality.

● Biography



Ahmed E. Kamal received a B.Sc. (distinction with honors) and an M.Sc. both from Cairo University, Egypt, and an M.A.Sc. and a Ph.D. both from the University of Toronto, Canada, all in Electrical Engineering in 1978, 1980, 1982 and 1986, respectively. He is currently a professor of Electrical and Computer Engineering at Iowa State University. Earlier he held faculty positions in the Department of Computing Science at the University of Alberta, Canada, and the Department of Computer Engineering at Kuwait University, Kuwait. He was also an adjunct professor at the Telecommunications Research Labs, Edmonton, Alberta. Kamal's research interests include high-performance networks, optical networks, wireless and sensor networks and performance evaluation. He is a senior member of the IEEE, a member of the Association of Computing Machinery, and a registered professional engineer. He was the co-recipient of the 1993 IEE Hartree Premium for papers published in Computers and Control in IEE Proceedings for his paper entitled Study of the Behaviour of Hubnet. He served on the technical program committees of numerous conferences and workshops, was the organizer and co-chair of the first and second Workshops on Traffic Grooming 2004 and 2005, respectively, was the co-chair of the Technical Program Committees of the Optical Symposium of Broadnets 2006, the Communication Networks and Services Research (CNSR) conferences 2006, the Optical Networks Symposium of the IEEE Globecom 2007, and is the Technical Program Chair of the AICCSA 2008 conference. He is an area editor of the Computer Networks journal, published by Elsevier.

Ubiquitous Services: Goals, Design Principles and Evaluation

Professor Mohamed Eltoweissy

Lecture time: Wednesday 4 July 2007

Abstract

Mark Weiser's vision of a ubiquitous "or calm" computing environment, where computing disappears in the physical world, was expected to come to fruition by the year 2008. However, while vast and rapid advances in research and technology have taken place, we are still no where near realizing Weiser's vision. More recently, several groups have started challenging the notions of calmness, seamlessness, and transparency inherent in the original ubiquitous computing vision. What went wrong? We surmise that the complexities of the field and the lack of unifying structures and evaluation methodologies have led researchers and practitioners to pursue disparate fragments that unfortunately did not add up to compose the whole. We aim at motivating more structured, systematic design, implementation and evaluation of large-scale ubiquitous solutions. We focus on applications that are dynamically composed of first-class ubiquitous services. This talk presents our proposal of a set of unifying goals, design principles and evaluation methodology for ubiquitous service environments. Within our work, we view ubiquity as a multi-dimensional spectrum, and introduce the novel notion of "Quality of Ubiquity (QoU)", expressed in terms of ubiquitous service goals. The QoU is used in dynamic service selection and in guaranteeing and negotiating services' ubiquity parameter values that may vary according to user needs and environment and system conditions.

● Biography



Mohamed Eltoweissy is an associate professor in the Bradley Department of Electrical and Computer Engineering at Virginia Tech. He also holds a courtesy appointment in Computer Science. Eltoweissy is founder and director of the Center for Cyber Assurance and Trust (CyCare) at Virginia Tech. Eltoweissy's research interests are in the areas of ubiquitous networking, assurance and trust, and service-oriented architectures and resource engineering for resource constrained networks. Eltoweissy has over 100 publications in archival journals and respected books and conference proceedings. Among Eltoweissy's research contributions are novel combinatorial-based survivable key management schemes for sensor networks and ad hoc networks, service-oriented architecture for sensor actuator networks, and stochastic models for the optimization of security protocols. Eltoweissy is also active in serving on program committees and NSF panels, in journal editorials and organization of professional meetings. In 2003, Eltoweissy was nominated for the Virginia SCHEV outstanding faculty awards; the highest honor for faculty in Virginia. Eltoweissy is a senior member of IEEE

$\langle \delta, \mu \rangle$ -Multicast Overlay Network

Dr. Khaled Ragab

Lecture time: Saturday 7 July 2007

Peer-to-Peer Overlay networks enabling an end-end application level-multicast service have drawn enormous attention. This paper proposes a self-organized $\langle \delta, \mu \rangle$ -Multicast Overlay Network ($\langle \delta, \mu \rangle$ -MON) that enables an efficient end-end application level multicast. The $\langle \delta, \mu \rangle$ -MON is organized into MON-Clusters, where d is the maximum physical number of hops between any two end-nodes in each MON-Cluster. Thus, end-users accessing from different areas are able to broadcast data into each MON-Cluster within a constant d physical number of hops. However in a dense-mode, increasing the size of MON-Clusters induces a long logical diameter that manifests high stress per physical links and high delay to disseminate data. Thus, this paper limits the expansion of each MON-Cluster within a specific logical diameter m . Each MON-Cluster is constructed with at most m logical hops over d physical hops. Thus, end-users are able to efficiently disseminate data into each MON-Cluster within m logical hops over d physical hops with reasonable stress per physical links and bandwidth consumption.

● Biography



Khaled Ragab is an assistant Professor of Computer Science at Department of Mathematic, Computer Science division, Ain Shams University, Cairo, Egypt. He joined Department of Computer Science, Tokyo University in 2005 as postdoctoral position. He was born in 1968 and received his B.Sc., M.Sc. degrees in Computer Science from Ain Shams University, Cairo, Egypt in 1990, 1999, respectively and Ph.D. degree in Computer Science from Tokyo Institute of Technology in 2004. He has worked in Ain Shams University, Cairo Egypt in 1990-1999 as assistant lecturer. He has worked as research scientist in Computer Science Dept., Technical University of Chemnitz, Germany in 1999-2001. His research interests include autonomic computing, Peer-to-Peer Systems, Overlay Networks, Web-services and application-level multicast.

Integration of RFID and Sensor Networks: Opportunities and Challenges

Haitham S. Hamza

Lecture time: Saturday 7 July 2007

● Biography



Haitham S. Hamza received the B.S. (Honors) and the M.S. degree in electronics and communication engineering from Cairo University, Cairo, Egypt, in 1998 and 2001, respectively. He received the M.S. and the Ph.D. degrees both in computer science from the University of Nebraska-Lincoln in 2002 and 2006, respectively. Dr. Hamza was the recipient of a Fling Fellowship from the UNL Graduate Studies in 2006. He received the Department of Computer Science and Engineering *Outstanding Teaching Assistant Award* for the academic years 2003-2004 and 2004-2005. For the academic year 2004- 2005, Dr. Hamza received the *2005 Collage of Art and Science Teaching Assistant Award*, and was nominated for the *University of Nebraska 2005 Outstanding Teaching Assistant Award*. His research interests are in the area of computer networks including design and analyses of photonic switches, optical interconnect architectures, WDM networks protection and restoration, wireless mesh networks, and large-scale distributed sensor networks. Dr. Hamza is the recipient of the *Best Paper Award* in the *2nd IEEE BROADNETS 2005 Optical Symposium*

Professor M.E. FAYAD

Talk title:

Lecture time: 15 July, 2007

● Biography



DR. M.E. FAYAD is a Full Professor of Computer Engineering at San Jose State University, from 2002 to present and CEO and Founder of a Silicon Valley Company called vrlSoft, Inc. He was a J.D. Edwards Professor, Computer Science & Engineering, at the University of Nebraska, Lincoln, from 1999 to 2002, and an Associate Professor at the Computer Science and Computer Engineering faculty at the University of Nevada, from 1995 - 1999. He has 28+ years of industrial and academic experience in the field. Dr. Fayad is a Senior Member of the *IEEE*, a Senior Member of the *IEEE Computer Society*, a Member of the *ACM*, an *IEEE Distinguished Speaker*, an Associate Editor, Editorial Advisor, and a Columnist for *The Communications of the ACM*; his column is *Thinking Objectively*; He is also a columnist for *Al-Ahram Egyptians Newspaper* (2 million subscribers), an Editor-In-Chief for *IEEE Computer Society Press - Computer Science and Engineering Practice Press (1995-1997)*. He has been involved in more than 75 conferences and workshops as a program/general conference chair and more than 200 conference and workshops as a program committee member, such as a general chair of IEEE/Arab Computer Society International Conference on Computer Systems and Applications (AICCSA 2001), Beirut, Lebanon, June 26-29, 2001, and he is the **president of Arab Computer Society (ACS)** from April 2004 to September 2006.

Dr. Fayad was a guest editor on nine theme issues:

- CACM's OO Experiences, Oct. 1995,
- IEEE Computer's Managing OO Software Development Projects, Sept. 1996,
- CACM's Software Patterns, Oct. 1996,
- CACM's OO Application Frameworks, Oct. 1997,
- ACM Computing Surveys - OO Application Frameworks, March 2000,
- IEEE Software - Software Engineering in-the-small, Sept./Oct. 2000, and
- International Journal on Software Practice and Experiences, July 2001,
- IEEE Transaction on Robotics and Automation -- Object-Oriented Methods for Distributed Control Architecture, October 2002, and
- Annals of Software Engineering Journal - OO Web-Based Software Engineering, October 2002.

He has published around 200+ articles in referred journals and magazines, such as IEEE Software, IEEE Computer, JOOP, ACM Computing Surveys, JOT, and CACM, referred conference proceedings, book chapters on OO software engineering methods, experiences, aspect-oriented programming, internet & web applications, enterprise and application frameworks, software patterns, and stability. He has also given more than 150 presentations, tutorials and seminars at many conferences, universities, companies and organizations, and he has presented various seminars in USA and several countries, such as Hong Kong (April 96), Canada (10 times), Bahrain, Saudi Arabia, Egypt (12 times), Portugal (Oct. 96, July 99), Finland (July 99), Mexico (Oct. 98), Argentina (3 times), Chile (00), Peru (02), and Spain (02), Brazil (04). Dr. Fayad has received an M.S. and a Ph.D. in Computer Science from the University of Minnesota at Minneapolis. His research topic was OO Software Engineering: Problems & Perspectives. He is the lead author of several Wiley books:

- *Transition to OO Software Development*, August 1998,
- *Building Application Frameworks*, Sept., 1999,
- *Implementing Application Frameworks*, Sept., 1999,
- *Domain-Specific Application Frameworks*, Oct., 1999, and
- 3 new books in progress: *Stable Analysis Patterns*, *Stable Design Patterns*, and *Stable Patterns in Action*.

He is currently working on a few books related to stable analysis patterns, stable design patterns, knowledge maps, pattern topology for UML, and many more. He is also working several theme issues and editorial projects, such as www.ijop.org, www.ijsa.net, www.ijsr.org, www.ijto.org, www.ijuse.org, www.ckplanet.org, and www.kmglobe.com.

Prof. Tarek M. Sobh, Ph.D., P.E., CMfgE

Vice Provost for Graduate Studies and Research
Dean, School of Engineering

University of Bridgeport

Lecture time: 9 July, 2007



Professor Tarek M. Sobh received the B.Sc. in Engineering degree with honors in Computer Science and Automatic Control from the Faculty of Engineering, Alexandria University, Egypt in 1988, and M.S. and Ph.D. degrees in Computer and Information Science from the School of Engineering, University of Pennsylvania in 1989 and 1991, respectively. He is currently the Vice Provost for Graduate Studies and Research and Dean of the School of Engineering at the University of Bridgeport, Connecticut; the Founding Director of the Interdisciplinary Robotics, Intelligent Sensing, and Control (RISC) laboratory; and a Professor of Computer Engineering, Computer Science, Electrical Engineering and Mechanical Engineering. He was the Interim Chairman of Computer Science and Computer Engineering and the Director of External Engineering Programs at the University of Bridgeport . He was an Associate Professor of Computer Science and Computer Engineering at the University of Bridgeport from 1995 -- 1999, a Research Assistant Professor of Computer Science at the Department of Computer Science , University of Utah from 1992 -- 1995, and a Research Fellow at the General Robotics and Active Sensory Perception (GRASP) Laboratory of the University of Pennsylvania from 1989 -- 1991. He was the Founding Chairman of the Discrete Event and Hybrid Systems Technical Committee of the IEEE Robotics and Automation Society from 1992-1999, and the Founding Chairman of the Prototyping Technical Committee of the IEEE Robotics and Automation Society from 1999-2001. His background is in the fields of computer science and engineering, control theory, robotics, automation, manufacturing, AI, computer vision and signal processing.

Integration of RFID and Sensor Networks: Opportunities and Challenges

Dr. Haitham S. Hamza

Lecture time: Saturday 7 July 2007

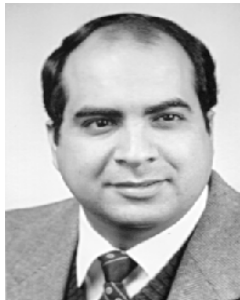
● Biography

Haitham S. Hamza received the B.S. (Honors) and the M.S. degree in electronics and communication engineering from Cairo University, Cairo, Egypt, in 1998 and 2001, respectively. He received the M.S. and the Ph.D. degrees both in computer science from the University of Nebraska-Lincoln in 2002 and 2006, respectively. Dr. Hamza was the recipient of a Fling Fellowship from the UNL Graduate Studies in 2006. He received the Department of Computer Science and Engineering Outstanding Teaching Assistant Award for the academic years 2003-2004 and 2004-2005. For the academic year 2004- 2005, Dr. Hamza received the 2005 Collage of Art and Science Teaching Assistant Award, and was nominated for the University of Nebraska 2005 Outstanding Teaching Assistant Award. His research interests are in the area of computer networks including design and analyses of photonic switches, optical interconnect architectures, WDM networks protection and restoration, wireless mesh networks, and large-scale distributed sensor networks. Dr. Hamza is the recipient of the Best Paper Award in the 2nd IEEE BROADNETS 2005 Optical Symposium.

Scheduling Task Graphs for Efficient Utilization of Cluster Computing Environments

Professor Reda Ammar

Scheduling a large number of high performance computing applications on cluster environment is a serious obstacle to achieving a good performance. This becomes more critical in real time systems. A cluster scheduler without enough knowledge of the state of the cluster and the scheduled tasks cannot adequately manage the cluster resources. Consequently, it may fragment the available processing power. This may cause rejection of some submitted applications due to tasks missing their deadlines. Few researchers have investigated the problem of scheduling real-time task graphs; however they have not provided mechanisms to satisfy the performance requirements while maximizing the processing power utilization. In this work, we focused on developing and evaluating scheduling techniques for real-time applications on cluster computing systems. These applications are represented as task graphs of different structures (tandem, fork join structure, conditional structure and loops) that arrive randomly to different nodes of the cluster. We have showed that using applications' task graphs give better results than treating each application as a single task unit.



● Biography

Resume of Dr. Reda Anwar Ammar

[\[Click here\]](#)

Shape from Shading – Extraction of 3D Information
from 2D Images: Recent Advances and Applications

Professor Aly A. Farag

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Louisville, KY, 40292 USA E-mail: aly.farag@louisville.edu – URL:
www.cvip.uofl.edu

Abstract

Images are projections of 3D objects captured by a camera from a certain pose and environmental conditions. 3D objects, as visualized by the human eye, may contain specularity, texture, and brightness variations (shading). The shape-from-shading (SFS) problem deals with estimation of the 3D shape information from the brightness variations (shading) in an image. The SFS formulation starts from the image formation equation. It is a 3D from 2D problem and, as such, is ill-posed. Most of the SFS algorithms have been developed under the simplifying assumptions of a Lambertian surface, an orthographic projection, and a distant light source. Due to the difficulty of the SFS problem, only a small number of algorithms have been proposed for surfaces with non-Lambertian reflectance, and among those, only very few algorithms are applicable for surfaces with specular and diffuse reflectance. Over the past three years, we have developed a unified framework for solving the SFS problem under various settings of imaging conditions i.e., Lambertian or non-Lambertian, orthographic or perspective projection, and distant or nearby light source. In this framework, we represent the image irradiance equation of each setting as an explicit Partial Differential Equation (PDE). We have developed a fast numerical algorithm based on Lax-Friedrichs sweeping method to solve this PDE. This framework and the new SFS algorithm have been favorably compared with the state of the art of the SFS literature. In this talk, I will overview the SFS problem and our most recent progress in solving it. The talk will also demonstrate a number of uses of SFS in biometrics, animation and biomedical applications.

● Biography



Aly A. Farag Aly A. Farag received the bachelor degree from Cairo University, Egypt and the PhD degree from Purdue University in Electrical Engineering. He also holds master degrees in bioengineering from the Ohio State and the University of Michigan. In 1989-90 he was a visiting professor at the University of Minnesota. He joined the University of Louisville in August 1990, where he is currently a Professor of Electrical and Computer Engineering. At the University of Louisville, Dr. Farag founded the Computer Vision and Image Processing Laboratory (CVIP Lab) which focuses on imaging science, computer vision and biomedical imaging. Dr. Farag main research focus is 3D object reconstruction from multimodality imaging, and applications of statistical and variational methods for object segmentation and registration. He has co-authored over 250 technical papers in the field of image understanding, co-edited two volumes on Deformable Models for Biomedical Applications (Springer-Verlag 2007), and authored an upcoming textbook on digital signal processing (Springer-Verlag, expected in 2007). He has applied his work to a number of industrial and biomedical applications and he holds a number of patents. He is a regular reviewer for the NSF and NIH, and various technical journals and international conferences. Dr. Farag was an associate editor of the IEEE Transactions on Image Processing. He is a Senior Member of the IEEE and SME. In 2002, Dr. Farag was awarded a University Scholar designation. <http://www.cvip.uofl.edu/farag/index.htm>

Student Section

Student welcome message

Dear Dr/Prof.....:

On behalf of all the under and post graduate students in Computer Science and Informatics Faculty of Cairo University , I would like to take a moment to thank you for your willingness to share your bright thoughts with us in "Ubiquitous Computing and Intelligence: Challenges and Solutions" workshop. We all sure that your truly scientist intuition will be very fruitful for shaping up our ideas, research, and enrich our growth as students, researchers and scientists want to be. It means so much to us to be surrounded by such a well-educated and high-qualified professors . Thanks

Marwa Sa`id Sharawi,

**Artificial Neural Networks Architecture for Intrusion
Detection Systems and Classification of Attacks**

By

Marwa Sa`id Sharawi

The ubiquity of the Internet poses serious concerns on the security of computer infrastructures and the integrity of sensitive data. Network Intrusion Detection Systems (NIDS) aim at protecting networks and computers from malicious network-based attacks. The underlying assumption of intrusion detection is an attack will noticeably affect system performance or behavior. Neural networks method is a promising technique, which has been used in many classification problems. The present study is aimed to solve a multi-class problem of intrusion detection using MLP in which not only the attack records are distinguished from normal ones, but also the attack type is identified. The results showed that the designed system is capable of classifying records with 93.43% accuracy with two hidden layers of neuron. Possible modifications in NN architecture using regularization parameters and data reduction using PCA or Rough sets will be discussed in the next stage of research.

● Biography



Marwa Sa'id Sharawi, is a teaching assistant, Computer Science Faculty, British University in Egypt (BUE), Cairo, Egypt. She received her B.Sc. degree in Information Technology from Computer Science and Informatics Faculty, Cairo University. Currently she is a master's student in same department of specialization (IT); her research area is focused on the Data Mining Applications and the Soft-Computing techniques such as Artificial Neural Networks, Genetics Algorithm, Radial Basis Function, and Support Vector Machines. She is an active member in the Egyptian rough sets working group (ERS). Email: mssharawi@hotmail.com

Multi-View Object Tracking

Shireen Youssef Y. Saleh Elhabian

Object tracking is an important task within the field of computer vision. The proliferation of high-powered computers, the availability of high quality and inexpensive video cameras, and the increasing need for automated video analysis has

generated a great deal of interest in object tracking algorithms. There are three key steps in video analysis: detection of interesting moving objects, tracking of such objects from frame to frame, and analysis of object tracks to recognize their behaviour. Therefore, the use of object tracking is pertinent in the tasks of motion-based recognition, automated video surveillance, video indexing, human-computer interaction, traffic monitoring, and vehicle navigation. Tracking objects can be complex due to loss of information caused by projection of the 3D world on a 2D image, noise in images, complex object motion, non-rigid or articulated nature of objects, partial and full object occlusions, complex object shapes, scene illumination changes, and real-time processing requirements. The need for using multiple cameras for tracking arises for two reasons. The first reason is the use of depth information for tracking and occlusion resolution. The second reason for using multiple cameras is to increase the area under view since it is not possible for a single camera to observe large areas because of a finite sensor field-of-view. An important issue in using multiple cameras is the relationship between the different camera views which can be manually defined or computed automatically from the observations of the objects moving in the scene. Most of multi-camera tracking methods assume stationary cameras while others handle non-stationary cameras or a combination of a combination of stationary and pan-tilt-zoom cameras with overlapping views for tracking. In many situations, it is not possible to have overlapping camera views due to limited resources or large areas of interest. Therefore some assumptions have to be made about the object speed and the path in order to obtain the correspondences across cameras. For scenarios in which spatio-temporal constraints cannot be used, for example, objects moving arbitrarily in the non-overlap region, the only tracking-by-recognition approach can be employed, which uses the appearance and the shape of the object to recognize it when it reappears in a camera view.

● Biography



Shireen Youssef, Teaching Assistant, Faculty of Computers and Information, Cairo University. BSc. in Information Technology. May 2002, Faculty of Computers and Information, Cairo University, Egypt, Graduation Project: Virtual Reality Toolkit with educational demo, GPA: 3.95 out of 4. MSc. in Information Technology. April 2005, Faculty of Computers and Information, Cairo University, Egypt, Thesis Topic: Object Detection and Tracking in Video Sequences, Case Study: Sperm Tracking, Project : Landmine Detection in Egypt, GPA : 3.83 out of 4. PhD. in Information Technology. August 2006 (Registered), Faculty of Computers and Information, Cairo University, Egypt, Thesis Topic: Multi-view Tracking. Major Research Interests in Video Analysis, Computer Vision, Object Detection and Tracking (single and multi-view), Video Abstraction, Video Annotation, Video Summarization, Video Skimming, Digital Image Processing, Pattern Recognition, Medical Imaging, Video Indexing, Content-based retrieval of images, Computer Graphics, Video Watermarking, Digital Speech Processing, Virtual Reality

A Proposed Intrusion Detection System for Encrypted Computer Networks

Nesreen Kamel

A computer system intrusion is seen as any set of actions that attempt to compromise the integrity, confidentiality, or availability of a resource. The introduction of networks and the Internet as a medium for wide scale electronic communication caused great concern about the protection of sensitive information. Although prevention methods such as access control, authentication, and encryption attempt to prevent intruders, these can fail, and as a second line of defense, intrusion detection has been introduced. Network-based intrusion detection systems are used to analyze network packets. Most of these systems depend on searching for attack patterns in the payload of network packets. Thus, if the payload is encrypted in transit then it becomes impossible to detect any patterns of attack. Useful analysis can be performed only after the payload has been decrypted on the target host, and this often occurs within a specific application. Driven by commercial and defense needs, encryption systems are likely to substantially increase in the near future. This trend will have a serious effect on the deployment of network-based intrusion detection systems.

My Masters' thesis presents a new proposal for using network-based intrusion detection systems in encrypted computer networks. The proposed system is based on application of key recovery procedures to the encrypted environment in which the intrusion detection system will be deployed. Key recovery is well known as an effective tool for authorized access and emergency decryption of encrypted traffic. By applying key recovery procedures to encrypted computer networks, network-based intrusion detection systems as authorized parties of the organization would be able to decrypt then monitor all encrypted connections between different parties of the network. Therefore, the proposed system restricts the avenues available to the attackers who hide their abuse by encryption. The proposed system has been studied to detect intrusion attempts in encrypted file transfer protocol (FTP) sessions. Furthermore, the system contributes to the encouragement of session and application level intrusion detection by providing a session decryption facility.

● Biography



Nesreen Kamel received her B.Sc degree (with honors) from the faculty of computers & information, Cairo University, in 2001. She received her M.A.Sc from the department of information technology, faculty of computers & information, in 2006. Currently she is studying towards her Ph.D at the department of info. Tech, faculty of comp. & info., Cairo University. Since 2001, Nesreen is working as a teaching assistant at the dept. of info. Tech (November 2005). She has been selected to work as a research assistant at the center of excellence of data mining & computer modeling. In which she has been assigned to work in a project that aims to investigate how data mining can be used to improve tourism revenue in Egypt. In this project, Nesreen focused on machine learning methods used in time series prediction, such as neural networks, support vector machines, and Gaussian processes. Her research interests are in network security, especially intrusion detection systems. Nesreen is also interested in data mining applications including time series prediction, and the application of data mining tools in network security field.

Pattern Discovery in Bio-sequences

Waleed Ahmed Abd El-Hamid Abo Hamad

In recent years, DNA microarray technology has proven to be a very powerful tool for simultaneously monitoring the expression of several thousands of genes. Analyzing the large amount of gene expression data from microarray chips promises to shed light on important questions in virtually all arenas, from the fundamental issue of how cells grow, to the medical challenge of understanding cancer, and to the industrial goal of developing fermentation processes. Computational tools are essential in data analysis and mining to extract the knowledge from the datasets produced by microarray technology. However, the analysis of such data is non-trivial as the number of genes measured in one sample is typically far greater than the number of samples. Therefore, the development of novel algorithms and techniques that can efficiently extract useful information from such datasets is crucial in realizing the full potential of microarray technology. Clustering analysis and other statistical methods have been established as primary tools for the analysis of microarray data. The aim of this thesis is to investigate the effectiveness of existing techniques and propose methods to analyze these datasets. A hybrid genetic immune approach is proposed to select informative genes from high dimensional microarray data. The main features for the proposed method are that it captures the main force of the evolutionary process for the Genetic Algorithm (GA) and the clonal selection principle which is one of main principles of the immune system. Also, principle component analysis (PCA) is investigated as an unsupervised dimension reduction technique and it is proven that it is closely related to unsupervised learning. A modification of this technique has been made which yields an improvement of the clustering results. Finally, the biclustering problem is investigated which attempts to discover local structure inherent in the gene expression matrix. A kernel-based Double Conjugated Clustering (DCC) is then proposed in which kernel principle component analysis is incorporated in the framework of DCC.

● Biography

Waleed Abd El Hamid was born in Manila, Philippines on March 5, 1981. His parents are Egyptian; his father works in the ministry of foreign affairs this is the reason why he was born abroad. He received his Bachelor of Information Technology with Honors and preparing for his Masters defense in Bioinformatics. He has worked as a teaching assistant since 2003 in the Information Technology Department at the Faculty of Computers and Information, Cairo University. Waleed's research interests are in Computational Intelligence, Pattern Recognition, Machine Learning and Cooperative Intelligent Systems. He has an active interest in Bioinformatics which considers as an interdisciplinary environment. He is wishing to put his country on the biotechnology map. He authored two papers (under review) in applied soft computing journal and Informatica journal. Waleed is a member of the support team of Avicenna Knowledge Center (AKC) – Egypt which main objective is to develop and improve E-learning and visual university concepts and practices. This project is based on a project funded and sustained by the European Commission and UNISCO-Paris.

Automated Multi Domain Image Fusion

Mohammed Hossny

Image fusion is the process of merging two or more images to produce a new image that is better than the original ones. Not only does the fusion aim to combine features of source images into a resulting one, it also aims to make new features visible. Quality assessment of image fusion algorithms is one of the hot topics in the field of fusion. However, judging fusion algorithms objectively is not easy. The main reason behind this is discussed by Wang. If really meaningful, the fusion algorithm will be able to determine the importance of input images in the fusion process. It also extends image fusion definition so it can fit to several applications. An automated fusion system should be able to identify informativity of images prior to fusion and estimate how much more information was added after fusion regardless of the content of the image. It aims to give the fusion system the ability to select, analyze, and evaluate fusion-worthy images and their potential to adding information to the result. It also depends on comparing the marginal added information per image to the added complexity in the fusion system. This presentation presents an introduction to image fusion, its quality metrics, and problems facing multi domain fusion.

● Biography



Mohammed Hossny is a Ph.D. student at Deakin University, Faculty of Engineering and Technology. His research interest now regards Augmented Haptics, and Virtual Reality. He has got M.Sc. degree on 10th May 2004 from Cairo University. The main contribution was driving implicit equations for digital images. He made use of Radial Basis Functions Networks, and Fuzzy C-Means Classifiers to encode digital images into coefficients of RBF implicit functions. In 2001, he has employed Puls-Coupled Neural Networks (PCNN) as well as Fuzzy Classifiers to detect renal stones in X-Ray images. The project was rated excellent.

Hossny has got his B.Sc. in Computer Science on May 2000, and was ranked first. His graduation project was driving a Software Engineering Model for Multimedia Based Authoring. The project was ranked excellent. Hossny worked as a full time TA in his Faculty of Computers and Informatics, Cairo University. He was also a part-time research programmer in IBM Technology Development Center (TDC) in Cairo. Hossny has worked in many projects regarding Image Processing, and Computer Graphics. A sample of these projects includes Texture Synthesis and Recovery, 3D Hole-Filling, 3D Viewer on Handheld Devices (150 Mhz, 32 MB RAM, and no graphics card). He is basically interested in soft computing, image processing, computer graphics and mathematical modeling. He is fond of STL C++ libraries, having a good algebraic view of containers and iterators. Hossny is now preparing an algebraic C++ library for his Ph.D.. Actually, it includes MatLab's indexing facilities with an STL-like interfaces. It simulates general and topological spaces, fields, and other high algebraic tools.

Minimizing Privacy Loss in the View Invalidation Problem

Hala Mostafa

Database managers from different institutions often collaborate to generate database views for dynamic webpages. How up-to-date a view is depends on the updates made to the underlying databases. A tricky dilemma arises from the contradictory requirements of keeping the view up-to-date while minimizing privacy losses associated with disclosing the updates. We reason about this tradeoff by formulating the problem as a game and relying on game-theoretic techniques to determine how much information should be disclosed by each database manager.

● Biography



Hala Mostafa obtained her MSc from the Faculty of Computers and Information, Cairo University in 2001. She is currently a PhD student at the University of Massachusetts at Amherst working in the Multi-Agent Systems (MAS) Lab. She investigates the tension between self-interested and cooperative behavior of intelligent agents. Her areas of interest include coordination in large-scale MAS as well as single and multi-agent decision-making under uncertainty in both cooperative and competitive settings. Web site <http://dis.cs.umass.edu/~hmostafa/>

Cocktail-Party Speech Separation

Gehan Mustafa Kamel

The Cocktail-Party Speech Separation problem is one of the newly-born topics related to the field of Automatic Speech Recognition (ASR). It is mainly aimed to enhance the robustness of ASR systems. In a broader sense, we can say that this direction of study addresses the different methods of separating or segregating super-imposed acoustic sources such as in a conversation between two or more people where they can sometimes talk simultaneously. In such a condition, although speech sounds overlap in time and frequency, there are certain features which can be used to separate them. For example, localisation is a specific cue which can be exploited. Such segregation techniques can be used as a front-end processor for robust cocktail-party speech recognition task. In fact, the success of ASR for concurrent speeches mainly depends on how efficiently the overlapping speeches can be separated into their originating acoustic sources. The more purely the originating sources can be recovered, the more we can guarantee that the ASR techniques can succeed. Cocktail-Party Speech Separation can be formally stated as follows: "It refers to the several approaches newly developed to enhance simultaneous speech recognition by taking as an input a signal containing overlapping acoustic sources and attempting to segregate such signal into separate signals containing the individual sources." Several different approaches have been brought up in an attempt to solve the problem of Cocktail-Party Speech Separation. Those included Independent Component Analysis (ICA), Feed-Forward Networks, statistical approaches, Blind Source Separation (BSS) Models and Computational Auditory Scene Analysis (CASA) models. My objective in my masters' thesis is to study and consequently devise methods for separating concurrent speeches in order to provide ASR methods a set of separated, un-noisy signals that can be accurately recognized. Cocktail Party Speech Separation has been found to be of great importance in many applications. Such applications include the recognition of telephone conversations, as well as television talk shows and radio programs.

● Biography

Gehan Mustafa Kamel, Teaching Assistant in the Information Technology Department, Faculty of Computers and Information, Cairo University (2004 to present time). Received B.Sc degree (with honors) from the faculty of computers & information, Cairo University, in 2004, Graduation Project: English OCR with a complete Speech System that allows blind users to navigate through the system on their own and a star printer adapted to print Braille characters. I am currently working on my masters' thesis which focuses mainly on cocktail-party speech segregation techniques. My major research interest is in Speech and Signal Processing.