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Curriculum Vitae

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الملخص التنفيذي

أنا أستاذ مشارك تخصص هندسة شبكات في كلية تقنية المعلومات، جامعة الإمارات العربية المتحدة. انضمت إلى جامعة الإمارات العربية المتحدة في سبتمبر 2002. قبل أن انضم إلى جامعة الإمارات العربية المتحدة، عملت في شركة Sigpro في كندا، وهي شركة تتولى وضع وتنفيذ البرمجيات والكيان المادي للأجهزة المحمولة يدويا. تحصلت على الدكتوراه في الهندسة الكهربائية والكمبيوتر من جامعة أوتاوا، كندا في عام 2001. خلال دراسة الدكتوراه، وضعت ونفذت بروتوكولات لتوفير جودة الخدمة لتطبيقات الوسائط المتعددة في شبكة الانترنت. تحصلت على البكالوريوس والماجستير في الهندسة الكهربائية والالكترونية من جامعة قارونس، بنغازي، ليبيا في عامي 1987 و 1995 على التوالي.

مهنتي في التدريس في المرحلة الجامعية والدراسات العليا تشمل مجموعة واسعة من المقررات التعليمية في شبكات الكمبيوتر الأساسية، وشبكات الكمبيوتر المتطورة، وإدارة الشبكات، وهندسة الكمبيوتر، ونظم المعلومات الجغرافية، ونظم توزيع ولغات البرمجة للأجهزة المكتبية والمحمولة. لقد قمت أيضا بدور نشط في تطوير المناهج الدراسية لبرامج الهندسة والتجارة الالكترونية. اقترحت ووضعت العديد من الدورات التدريبية على المستويات الجامعية والدراسات العليا.

أنشطة بحثي تنور حول جوانب مختلفة من الشبكات المتطورة السلكية واللاسلكية، والحوسبة المتنقلة، خصوصا في الوقت الحقيقي لتطبيقات الوسائط المتعددة. اهتماماتي البحثية تشمل جودة الخدمة في الشبكات السلكية واللاسلكية، انظمة الوقت الحقيقي، والحوسبة المتنقلة. بدأ العمل الأولي على جودة الخدمة أثناء دراسة الدكتوراه في جامعة أوتاوا، كندا، حيث قمت بتصميم وتنفيذ بنية نهاية إلى نهاية للحصول على دعم جودة الخدمة في شبكة الانترنت. في وقت لاحق، كأستاذ مساعد في جامعة الإمارات العربية المتحدة، ركزت على دعم جودة الخدمة في الشبكات اللاسلكية. وقد أدى هذا العمل في مساهمات عديدة في شبكات UMTS اللاسلكية القائمة. كنتيجة للبحوث المذكورة، تحصلت على جائزة سيسكو للبحوث المتميزة في 2006، ونشرت 8 ورقات في مجلات متعددة و 29 ورقة بحثية في مؤتمرات متعددة.

Executive Summary

I am an Associate Professor of Network Engineering at the Faculty of Information Technology, United Arab Emirates University (UAEU). I joined the UAE University in September 2002. Before joining the UAEU, I worked at Sigpro Wireless in Canada, a company that develops and implements software and hardware for handheld devices. I received my Ph.D. in Electrical and Computer Engineering from University of Ottawa, Canada in 2001. During my Ph.D. studies, I developed and implemented protocols for providing Quality of Service for multimedia applications in the Internet. I received my B.Sc. and M.Sc. degrees in Electrical and Electronic Engineering from Garyounis University, Benghazi, Libya in 1987 and 1995 respectively.

My teaching proficiency at the undergraduate and graduate comprise a wide range of courses from fundamental computer networking, advanced computer networking, network management, computer architecture, geographical information systems, distributed systems and programming languages for desktop and handheld devices. I have also been active in curriculum development for Network Engineering and E-Commerce programs. I proposed and developed several courses at the undergraduate and graduate levels.

My research activities revolve around various advanced aspects of wireless and wired networking, and mobile computing, especially for real-time multimedia applications. My research interests include Quality of Service of wired and wireless networks, Real-time embedded systems and mobile computing. The initial work on Quality of Service began during graduate studies at University of Ottawa, Canada, where I designed and implemented an end-to-end architecture for QoS support in the Internet. Subsequently, as an Associate Professor at the United Arab Emirates University, I focused on QoS support in wireless networks. This work has resulted in several contributions in UMTS based wireless networks. As a result of my research conduct, I received the 2006 Cisco Research Excellence Award and published 8 journal papers and 29 conference papers.

المعلومات الشخصية

أستاذ مشارك، تقنية المعلومات، هندسة شبكات الكمبيوتر
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تاريخ ومكان الولادة : 15 يونيو 1965 ، بنغازي ، ليبيا

خلاصة المؤهلات

- أمتلاك المعرفة الضرورية لتقديم الحلول الأكاديمية والحلول التقنية.
- متحصل على شهادة في التخطيط الاستراتيجي، مركز التعليم المستمر، الإمارات العربية المتحدة، 19-23 فبراير، 2012.
- متحصل على شهادة في قيادة فريق العمل، مركز التعليم المستمر، الإمارات العربية المتحدة، 3-6 أكتوبر، 2011.
- 10 سنوات خبرة في التدريس الجامعي في نطاق واسع من المواضيع مثل هندسة الكمبيوتر، شبكات الكمبيوتر، الشبكات اللاسلكية، نظم التشغيل، النظم الموزعة ، الحوسبة النقالة ، التجارة الإلكترونية، أنظمة المعلومات في مجال الأعمال، إدارة المشروعات ، ولغات البرمجة.
- 10 سنوات خبرة عملية في مجال تقنية المعلومات والاتصالات والبنية التحتية للاتصالات.
- أكثر من 14 سنة من الخبرة البحثية في جودة الخدمة للشبكات السلكية واللاسلكية ، وبروتوكولات الشبكات ، شبكات الاستشعار اللاسلكية ، وأنظمة الوقت الحقيقي المدمجة.
- إدارة عدة مشروعات الصغيرة إلى المتوسطة الممولة من قبل جامعة الإمارات العربية المتحدة.
- متحصل على جائزة الخدمة المتميزة، كلية تقنية المعلومات، جامعة الإمارات العربية المتحدة، عام 2011.
- متحصل على جائزة سيسكو للتميز في مجال البحث العلمي عام 2006 ، وذلك تقديراً للمساهمات العلمية في مجال جودة خدمة شبكات الكمبيوتر.
- خبرة في تطوير المناهج الدراسية الجامعية.
- مهارات التواصل مع الآخرين، العمل الجماعي، قيادة فريق العمل ، وإدارة فريق العمل.
- سريع التعلم وأعمل بشكل جيد تحت الضغط.
- أمتلاك مهارات وتقنيات عدة في لغات البرمجة، تطوير شبكات الكمبيوتر، التجارة الإلكترونية، نظم التشغيل، تقنيات الشبكات السلكية واللاسلكية.
- نشرت 8 ورقات في مجلات متعددة و 29 ورقة بحثية في مؤتمرات متعددة، وانتاج عدد 2 تطبيقات الهاتف المحمول.

الشهادات العلمية

- 2001-1996: دكتورة، هندسة كهربائية وهندسة كمبيوتر ، جامعة أوتاوا ، أوتاوا ، كندا.
- 1995-1992: ماجستير، هندسة كهربائية والإلكترونية ، جامعة قاريونس ، بنغازي ، ليبيا.
- 1987-1984: بكالوريوس ، هندسة كهربائية والإلكترونية ، جامعة قاريونس ، بنغازي ، ليبيا.

الخبرة العملية

- 2008 إلى الوقت الحاضر: أستاذ مشارك ، كلية تقنية المعلومات، جامعة الإمارات، العين، الإمارات العربية المتحدة .
- 2008-2002: أستاذ مساعد ، كلية تقنية المعلومات، جامعة الإمارات، العين، الإمارات العربية المتحدة .
- 2002-2001: خدمات الجيل الثالث، شركة SigPro ، أوتاوا، كندا.
- 1994-1990: مهندس استشاري اتصالات وكهرباء ، مكتب العمارة للاستشارات الهندسية ، بنغازي، ليبيا.
- 1990-1988: مهندس اتصالات ، شركة الكهرباء، بنغازي، ليبيا.

اللغات

- اللغة العربية: أجيد القراءة والكتابة والاستماع.
- اللغة الإنجليزية: أجيد القراءة والكتابة والاستماع.

Qualifications Synopsis

- Have the necessary knowledge to deliver quality academics and technical solutions.
- 10 years university teaching experience in a wide scope of subjects such as computer architecture, computer networks, wireless networks, operating systems, distributed systems, mobile computing, mobile commerce, information in business, project management, and programming languages.
- 10 years industrial experience in information communications technology (ICT) and telecommunications infrastructure.
- 14+ years research experience in quality of service of wireline and wireless networks, routing protocols, Ad-Hoc routing, wireless sensor networks, and real-time embedded systems.
- Experience in curriculum development.
- Solid interpersonal communication skills, team work, team leadership, and team management.
- Quick learner, motivated, and works well under pressure.
- Have several skills and technologies in programming languages, web development, mobile programming, e-commerce, m-commerce, operating systems, wired, wireless network technologies, and simulation tools.

Skills and Technologies

- Languages: Java SE, J Mobile Edition, C, C++, Visual Basic, HTML, Fortran, Assembly language.
- Platforms: Microsoft Windows, Microsoft Office, UNIX, SunOS/Solaris 2.x, Linux.
- Networking Technologies: LAN, TCP/IP, OSPF, RSVP, ATM, RTP, VoIP, RMI, WCDMA, OFDMA, LTE, Agent Platform, and Network Security.
- Simulation Tools: OPNET Simulation tool, Customized simulation tools.

Research Focus

Rapid advances in very-high-speed networks and wireless networks have opened tremendous research and commercial opportunities for multimedia computing and its applications. The demand for quality of service requires software and hardware support at both routers and end systems, which has led to a full range of new research topics, including multimedia network protocols, resource management protocols and real-time operating systems. My research interests cover:

- Quality of service;
- Routing protocols;
- Ad-Hoc routing protocols;
- Quality of service routing;
- Signaling protocols;
- Admission control;
- Mobile computing;
- Real-time embedded systems;
- Wireless sensor networks.

Education

Ph.D. in Electrical and Computer Engineering, University of Ottawa, Ottawa, Canada, 2001.
Thesis title: "End-to-End Quality of Service Support for Multimedia Applications in the Internet."

M.Sc. in Electrical and Electronic Engineering, Garyounis University, Benghazi, Libya, 1995.
Thesis title: "Software and Hardware Support for Real-Time Systems."

B.Sc. in Electrical and Electronic Engineering, Garyounis University, Benghazi, Libya, 1987.
Graduation project: "8085 microprocessor applications."

Work Experience

Fall 2008- Present: Associate Professor, Faculty of Information Technology, UAE University, UAE.

Fall 2002- Spring 2008: Assistant Professor, Faculty of Information Technology, UAE University, UAE.

August 2001- August 2002: Network Protocols Researcher and Developer, SigPro Wireless Inc. Ottawa, Canada. SigPro Wireless is a company that develops and implements software and hardware for hand-held devices. My main role was guiding the software and hardware teams in integrating their work together, and conducting research and development on advanced algorithms for wireless networks.

1997-2001: Teaching and Research Assistant, Electrical and Computer Engineering Dept. University of Ottawa, Ottawa, Canada.

Teaching Assistant

Teaching assistant for the following undergraduate courses:

- Linear and Non-Linear Electronics
- Real-Time Systems Design
- Microprocessor-Based Systems
- Computer Communications

Research Assistant

- Research assistant in the Multimedia and Mobile Agent Research Laboratory. Research involves end-to-end quality of service guarantee for multimedia applications.

1990-1994: Consultant Engineer, Al-Emarra Office for Engineering Consultant, Benghazi, Libya. Consultations in Electric, Telephone and Computer networks design and installation.

1988-1990: Communications Engineer, General Electric Company, Benghazi, Libya. Operation and maintenance of PLC (Power Line Carrier) network.

Teaching

Teaching Statement

Teaching is one of the few professions that allow a human to have a positive, lasting impact on society. The fact that I play such a significant role in the development of knowledge is a responsibility that I take very seriously and will always appreciate. Teaching allows me to promote the discipline to which I have devoted a significant portion of my life, and to show people the beauty of technology in terms of networking, computing systems, and ubiquitous computing. I also recognize that my disciplinary interests intersect and influence each other. For example, my teaching of ubiquitous computing is informed by my understanding of networking and computing systems and my teaching of networking is informed by my background in computing systems.

My philosophy of teaching is that learning is best facilitated by an instructor who balances theory with effective practice. I encourage my students to take an active role in the classroom, guiding classroom discussions and curriculum choices, and discovering and using their new knowledge. Clear objectives guide lessons and assignments, and I believe that students should be aware of them and able to determine when they have mastered them. Good course material with sufficient problems/examples and case studies is very effective. While advance preparation is essential, I believe that there should be enough room for flexibility and I tend to adapt to the requirements as the course proceeds. This was especially true in case of open-ended design projects where the material was modified appropriately depending on the group's performance.

Information technology involves a significant amount of teamwork. Several employers emphasize the need for a team player with good interpersonal skills. For this purpose, I strongly promote design projects involving student groups, which provide students with vital opportunities to effectively work as a team. These projects are useful learning tools where the students integrate and implement all the concepts they have learned in the classroom to bring the project to realization.

Students tend to learn more effectively from an approachable teacher who sets up a comfortable atmosphere conducive to learning. Thus, the education goes beyond the classroom and students tend to visualize the teacher as a role model from whom they seek universal advice on topics ranging from fundamental concepts to future careers options, and recommendations.

Technology is very useful and should be utilized effectively. I feel that "seeing is believing" and so audio-visual aids like using PowerPoint slides for lectures, providing handouts, showing animations to emphasize important points, are effective learning tools with proven impacts. In addition, I encourage the use of state-of-the art software to stay in tune with the needs of the information technology industry. Eventually, I firmly believe that the best way to learn is to teach and one continues to learn all through one's life. In addition to faculty input, and discussions with peers, my students' responses are the best source for improving my teaching techniques which are evolving on a continuous basis.

Teaching Methodologies

Active learning, student-based learning, is the teaching methodology adopted and supported by the UAE University. The university encourages faculty members to develop courses for active learning. The university has also conducted a series of workshops that helped faculty members move smoothly from classical-based, teacher-based learning, teaching methodology to active learning methodology. Being a faculty member at the UAE university, I have attended several workshops and seminars that helped me apply the active learning methodology in my lecture conduct. I have also involved in developing several courses for active learning.

Teaching Tools

I have used several teaching aid tools and teaching supplements during my lecture and lab conduct. Following are some of the tools I used:

- Laptop, for active learning
- Blackboard course management system

- Java applets and animations.
- OPNET simulation tool
- Cisco routers and switches
- Network management and monitoring tools; e.g. Ethereal
- OpenSSL
- White Papers
- World Wide Web
- Discussion groups
- Whiteboards

Academic Courses Taught

I taught the following courses at the Faculty of Information Technology, United Arab Emirates University.

- Communications and network fundamentals
- Network protocols and software
- Computing systems
- Network operating systems
- Network Management and Evaluation
- Location Based Services and Web-Based GIS (Masters program)
- Secure Electronic Commerce
- Mobile Commerce
- Applied Random Process
- Database Management Systems (Masters program)
- Wireless & Mobile Communications
- Research Case Studies (Ph.D. program)
- Information Systems in Business
- Project Management
- Introduction to Visual Programming

Academic Courses developed for Active Learning

- ECBP 411 Mobile Commerce
- RGIS 605 Location Based Services and Web-Based GIS (Master program)
- NEBP471 Network Management and Evaluation
- ECBP 324 Network Operating Systems (Distributed systems)
- ITBP 310 Network Protocols and Software
- NEBP 441 Wireless and Mobile Communications

Teaching Improvement Activities

Teaching in IT is very challenging and very dynamic. To be a successful teacher in the field of IT I have to keep a close eye on the evolving technologies and integrate them in the curriculum. Following are some of the activities that I have attended to keep myself updated with the new teaching tools and technologies.

- Attended a one-day workshop on interactive learning (WACE Learning System) hosted by UAE University on December 2003.
- Attended workshops organized by CIT on active learning and course assessment
- Attended a workshop on writing course outcomes and objectives and doing the assessment, organized by CIT and delivered by Dr. Ali Nazmi, April 2006

- Attended E-commerce retreat on course assessment and curriculum development, Wednesday, 25 April 2006 lead by Beverley Hope.
- Attended the CCNA-1 and CCNA-2 courses and passed the CISCO online exams.
- Attended four workshops delivered by IBM company
 - Web Sphere Device Developer (WSDD) and J2ME
 - Enterprise java beans
 - Web Sphere Portal
 - Web Services
- Attended a workshop on interactive whiteboards organized by CIT teaching development unit, November 2007.
- Attended a faculty workshop II on Enhancing Critical Thinking in the Classroom organized by CHSS Committee on Effective Teaching (CET) & Faculty of Information Technology (CIT), December 2007.
- Attended a seminar on Quality Assurance and Program Evaluation, organized by the office of Vice Provost for Undergraduate Education and Dean of the University Faculty, Wednesday February 2010.
 - Student Quality Assurance in Higher Education, by Dr. Gary Ingersoll, Dean of faculty of Education.
 - Program Evaluation: Qualification Frameworks, by Dr. Donald Baker, Dean of Faculty of Humanities and Social Science.
- Attended a workshop on Inquiry-Based Learning, University College, UAE University, 28-29 November 2011. Delivered by Professor Michael Krenn, a professor of History at the Appalachian State University, USA.
- Certificate in team leadership, Continuing Education Center, UAE University, 3-6 October, Al Ain, UAE, 2011.

Curriculum Development

- Involved in Network Engineering track curriculum development

Students Projects

- Master Projects
 - Thesis supervisor: UAE Tourist Guide, Master Program of Remote Sensing and GIS, UAE University, 2007.
 - Thesis co-supervisor: Colour Coded GIS MAP for Building Rent Prices in Abu Dhabi, UAE University, 2007.
- Senior Graduation Projects
 - Deployment Study of ZigBee Network in FIT Building, 2010.
 - FIT Smart Building (wireless sensor network), 2010.
 - Mobile Audience Response System, 2010.
 - UAE University Buses Tracking System, 2009.
 - Mobile Electronic Auction System, 2008.
 - Mobile Electronic Traffic Ticket System, 2008.
 - Performance Evaluation of Network Impairments on Video Quality, 2007.
 - Performance Study of UMTS Radio Resource Management Protocol, 2007.
 - Design and implement of mobile phone application using web services, 2006.
 - Performance Comparison of DSDV and DSR Ad Hoc Routing Protocols, 2006.

Services

Service Statement

Educational service has been defined as the acceptance and fulfillment of professional responsibilities outside the classroom. Educational service should have a relationship with the Faculty and university mission. Since I joined the UAEU in September 2002, I have been involved in several community service activities such as Faculty and university committees, technology transfer, and student recruitment, represent the university in exhibitions held in the UAE, participate in Innovations in Information Technology conference, etc. I believe that community service is part of my educational career, so I have been actively seeking to take part in such services and taking the initiative to provide the service. I deem that the services I provided contributed to the fulfillment of the Faculty and the university missions and goals.

Faculty Service

- Coordinator of Graduation Projects Unit, Faculty of Information Technology, UAE University, 2009-Present.
- Chair of the Teaching committee, Faculty of Information Technology, UAE University, 2011.
- Delivered a workshop on "Teaching Effectiveness," University of Benghazi, Libya, 26-27 December 2011.
- Member of the Teaching Committee (2007 – 2009)
- Member of the Faculty Scientific and Social Events Committee (2006/2007)
- Chair of the Student Welfare Committee (2004/2005)
- Member of the Faculty Scientific and Social Activities (2004/2005)
- Member of the Teaching Effectiveness and Evaluation Committee (2004/2005)
- Member of the Public Relations Committee (2003/2004)
- Member of the Internship Program Committee (2003/2004)
- Member of the Public Relations committee (2002/2003)
- Member of the Student's Activity committee (2002/2003)
- Member of the Honor's Program committee (2002/2003)
- Conducted a workshop on Embedded Systems and programming small devices using Web Sphere Device Developer (WSDD) as part of technology transfer of IBM tools and technology. The workshop held on April 29, 2006 for one week.
- Supervised a team of three students for the National Mobile Application Contest. The team got the second place, Dubai, 2006.
- Supervised two teams of students for the National Mobile Application Contest, Dubai, 2007.
- Demonstrated the Location Base Service Application to VIPs and visitors of CIT
- Interviewed several Faculty and Instructor candidates for Network Engineering Track.
- Meeting with the Military Survey in Abu Dhabi, April 17, 2006.
The purpose of this meeting is to investigate areas of collaboration between the UAEU and the military survey.
- Supervising students for Internship, 2004, 2005, 2006 and 2007
- Supervised 7 Senior Exhibition projects
- Supervised one Master project, UAE University, 2007
- Co-supervised one Master project, UAE University, 2007

University Service

- Member of the General Education Committee (2006 – Present).
- Represented the UAE University at the Environment 2005 Exhibition and Conference.
- Represented the UAE University at the 7th International Defense Exhibition & Conference (IDEX 2005).
- Represented the UAE University at GITEX, Dubai, 2005.

External Service

- Member of the National Mobile Application Contest Steering Committee (2006 – Present)
The role of the steering committee is to set the policies and general rules for the conduct of the Contest. The Committee consists of representatives of Etisalat, Nokia, Etisalat University Faculty, and other UAE major universities.
- Consultation work (2006): developed new study plan and curriculum for the Network and Communications Engineering program in Al Ain University of Science and Technology.

Conference Activities

- Organized and co-chaired the Innovations 2011 conference.
- Worked as TPC member in various international conferences; GC, ICC, IWCMC, ICNC, etc. 2010, 2011.
- Participated in the journal paper review process.
- TPC Member of The First IEEE International Workshop on Applications of Ad hoc and Sensor Networks, Japan, 2008.
- TPC Member of *IWCMC'08 Wireless LANs and Wireless PANs Symposium, Greece, 2008.*
- TPC Member of the 23rd Annual ACM Symposium on Applied Computing, Brazil, 2008.
- Reviewed papers for *ICC'08 WCS.*
- Reviewed papers for IEEE WCNC 2008.
- Technical Program Co-Chair of The fourth International Conference on Innovations in Information Technology (IIT'07)
- Reviewed papers for The International Conference on Innovations in Information Technology (IIT'06)
- Reviewed papers for The First International Conference on Innovations in Information Technology (IIT'05)
- Session chair; First International Conference on Modeling, Simulation, and Applied Optimization, Sharjah, UAE, February 1st, 2005.
- Session chair; Communications Protocols and Standards, IASTED International Conference on Wireless and Optical Communications 2003.

Honors and Awards

- Certificate in strategic planning, Continuing Education Center, 19-23 February, Al Ain, UAE, 2012.
- Certificate in team leadership, Continuing Education Center, 3-6 October, Al Ain, UAE, 2011.
- Faculty of Information Technology Outstanding Service Award, 2011.
- UAE University Merit Award for Exceptional Service, April, 2007.
- Certificate of appreciation by the M.Sc. in Remote Sensing and GIS Program graduates in Honor and Recognition of outstanding support and providing valuable knowledge to the students, 2007.
- Certificate of Recognition by the National Mobile Application Contest Steering Committee for the participation in the steering committee, 2007.
- The 2006 Cisco Research Excellence Award; In recognition of my significant contributions in the field of network quality of service.
- UAE University Salary increase for Exceptional Service, December, 2006.
- UAE University bonus payment for Exceptional Service, June, 2006.
- Certificate of Recognition by the National Mobile Application Contest Steering Committee for the participation in the steering committee, 2006.
- Certificate of Recognition by IIT 2006 for contribution to the Third International Conference on Innovations in Information Technology, Dubai, 2006.
- Certificate of Recognition by the UAE University for the participation at the Environment Conference and Exhibition 2005.
- Certificate of Recognition by the Faculty of Information Technology Association (CITA) for supporting CITA activities, May 2005.

- Certificate of Recognition by the Faculty of Information Technology Association (CITA) for giving tutorial session as part of CITA activities, June 2004.
- Certificate of Recognition by the Faculty of Information Technology for the participation of organizing the Second Programming Contest, December 2002.

Research

Research Statement

My research interests include Quality of Service of wired and wireless networks, Real-time embedded systems and mobile computing. The initial work on Quality of Service began during graduate studies at University of Ottawa, Canada, where I designed and implemented an end-to-end architecture for QoS support in the Internet. Subsequently, as an Associate Professor at the United Arab Emirates University, I focused on QoS support in wireless networks. This work has resulted in several contributions in UMTS based wireless networks.

During the last four years my work has focused on developing applications for handheld devices, and extending this work in several directions. In this work, we use the J2ME and web services technologies to enable handheld device users communicate with back-end servers that provide services to these clients. One of these applications is the Dynamic Location Based Services. The Dynamic Location Based Services (DLBS) application allows mobile phone users to locate active nearby businesses, service centers, hotels, restaurants, car parks, etc. The DLBS application consists of front-end, back-end and service providers' portal. Mobile users use the front-end to send DLBS request to back-end that replies with the Point of Interests (POIs) as requested by the users. Service providers need to access the back-end server to add or update their services. One of the main contributions of this work is the implementation of an end-to-end working system. Currently, we are extending this research in collaboration with school of Business to conduct a project on Development and Acceptance of Dynamic Location Based Service Technology.

As a result of this research project, I have been approached by some other research group at the Agriculture school to use mobile computing technology in some projects related to the agriculture. Another area of research related to mobile computing is to perform some performance evaluations in applying mobile applications in GSM based networks, this involves web services throughput, latency, QoS, etc. Summary of funded projects, publications and students' projects guidance of the above mentioned research areas are mentioned below.

Industrial Projects

- **June 2005–2008:** “Dynamic Location Based Services Project”, Faculty of Information Technology, UAEU.
The Dynamic Location Based Service (DLBS) application allows mobile phone users to locate active nearby businesses, service centers, hotels, restaurants, car parks, etc. The DLBS application consists of front-end, back-end and service providers' portal. Mobile users use the front-end to send DLBS request to back-end that replies with the Point of Interests (POIs) as requested by the users. Service providers need to access the back-end server to add or update their services. My role in this project is to develop and implement the front-end applications.
- **September 2004 – 2006:** “Telematics Smart Box Project”, a 2.3 million Euro joint project with IBM Germany Engineering & Technology Services.
This box is similar to the so-called black box found in aircraft, which can capture, analyze and deliver relevant data via a wireless network. The device, using multiple microprocessors based on Power Architecture, plus a multitude of other sensors, could be attached to the automobile's carriage to, for example, monitor the vehicle's speed, comparing it to the speed limit of the street. My main tasks in this project are research and development, and technology transfer.

Interdisciplinary Projects

- **Co-investigator;** Intelligent Monitoring and Control for Electrical Power Research, November 01, 2010 to December 31, 2012.
- Joint research project with the Faculty of Food and Agriculture, Deploying wireless sensor network in greenhouse for Improving Greenhouses Functionality in summer under UAE Conditions, January 2011 to January 2012.

- **Co-Investigator:** Interdisciplinary Research Project no. 1432-06-02-10, "Surveillance of Poultry Production Units in UAE for Better Bio-security", 2010. My role in the project is:
 - Modifying the developing an electronic documentation system for poultry production activities for each production unit in the farm using a PDA to store and send the information to the central server (database).
 - Supervising programming of front-end, back-end and GIS map interface with the database
 - Testing the developed system
- **Jan. 2006-2010:** "Development and Acceptance of Dynamic Location Based Service Technology", Co-Investigator, UAEU interdisciplinary research project. My main contribution is the implementation of Dynamic Location Based Service (DLBS) application on the mobile phone.

Individual Projects

- **Jan. 2006-2008:** "QoS Evaluation of In-Vehicle Telematics System – UAE Case Study", Principal Investigator, UAEU individual research project.
- **Jan. 2006-2010:** "Applying Mobile Computing Technology in Traceability of Poultry Production", Co-Investigator, UAEU individual research project. The contribution to this project is to design and implement the end-to-end mobile application for the poultry production traceability system.
- **Feb. 2005-Feb. 2006:** "Performance Evaluation of Deploying Ad Hoc Wireless Network in Jimi II Campus ", Principal investigator, UAEU individual research project. In this research project we evaluate the performance of Ad Hoc wireless network in an indoor and outdoor environment. Jimi II campus of UAEU will be used as the testing site for this work. The testbed consists of around 10 laptops equipped with wireless radio LAN interface that implements IEEE 802.11. We evaluate the performance from the point of view of routing, signal strength, quality of service, and the coexistence of Ad Hoc with infrastructure wireless LAN.
- **January 2004-March 2005:** "Context Transfer for Mobile Users and Multimedia Applications n Wireless Networks", Co-investigator, UAEU individual research project. In this research, we investigated the problem of context transfer and dynamic quality of service provisioning in the context of mobile and wireless environment. My contribution was to provide the simulation program, and ran some simulation scenarios.
- **June 2003-June 2005:** "Performance and Simulation Modeling of UAEU Campus Computer Network", Co-investigator, UAEU individual research project.
In this work, we simulated the UAEU campus network using OPNET to monitor its performance and suggest future enhancement, and studied the possibility of improving the quality of service for multimedia applications. My role was to help simulating the network using OPNET and develop algorithms for quality of service.
- **Jan. 2003-March 2004:** "Connection Setup for Multimedia Applications in Wireless Networks", Principal Investigator, UAEU individual research project. In this research project, we presented an end-to-end quality of service architecture for multimedia applications in wireless cellular networks. Radio resource management algorithms were studied, and then presented enhanced algorithms that fulfilled the QoS needs of multimedia applications.
- **Jan. 2003-March 2004:** "Building More Reliable and Scalable Networks", Co-investigator, UAEU individual research project. My contribution to this project is to provide software to build a quality of service paths.

Publications

Journal Papers

1. F. Sallabi, A. Karmouch, "Network Domain Agency for QoS Management in OSPF Configured Networks", *Networking and Information Systems Journal*, No. 3, 2000.
2. Sallabi, Ahmed Karmouch and Khaled Shuaib "Design and Implementation of a Network Domain Agency For Scaleable QoS in the Internet", *Computer Communications Journal*, Elsevier Science, Vol 28/1 pp 12-24, Feb. 2005.
3. Khaled Shuaib, Abderrahmane Lakas and Farag Sallabi, "Smoothing and Transporting Video in QoS IP Networks", *The International Journal of Communication Systems*, Wiley Inter-Science, vol 19, issue 7, 2005, pp 775-794.
4. F. Sallabi, K. Shuaib and M. Shafique, "Quality of Service Provisioning for UMTS Network Users with Immediate and Advance Radio Resource Reservation", *Journal of the Franklin Institute* 343 (2006) 468-479.
5. Khaled Shuaib, Maryam Alnuaimi, Mohamed Boulmalf, Imad Jawhar, Farag Sallabi and Abderrahmane Lakas, "Performance Evaluation of IEEE 802.15.4: Experimental and Simulation Results", *Journal of Communications*, VOL. 2, NO. 4, June 2007.
6. Khaled Shuaib and Farag Sallabi, "Extending Link State IGPs for Load Management in MPLS Networks", *The International Journal on Computers and Their Applications*, Vol 15, issue 2, June 2008, pp 124-136.
7. Farag Sallabi, Moustafa Fadel, Ahmed Hussein, Ahmad Jaffar and Hazem El Khatib, Design and implementation of an electronic mobile poultry production documentation system, *Journal of Computers and Electronics in Agriculture*, Elsevier, Available online February 17 2011.
8. Khaled Shuaib, Farag Sallabi and Liren Zhang, Smoothing and Modeling of Video Transmission Rates over a QoS Network with Limited Bandwidth Connections, Accepted for publication in the *International Journal of Computer Networks & Communications (IJCNC)*, Notification of acceptance on March 15, 2011.
9. Farag Sallabi, Khaled Shuaib, QoS Analysis and Resource Allocation Scheme for LTE Network, Submitted to *annals of telecommunications*, Springer, October 2011.
10. F. M. Sallabi, A. M. Gaouda, A. H. El-Hag. And M.M.A. Salama, Evaluation of ZigBee Wireless Sensor Networks Under High Power Disturbances, Submitted to *IEEE Transactions on Power Delivery*, December 2011.

Conferences Papers

1. F. Sallabi, A. Karmouch, "New Resource Reservation Architecture with User Interactions" Proceedings of IEEE Pacific Rim Conference on Communications, Computer and Signal Processing, August 22-24, 1999, Victoria, B.C, Canada.
2. F. Sallabi, A. Karmouch, "Immediate and Advance Resource Reservations Architecture with Quality of Service Routing Agents" Proceedings of Multimedia Modeling (MMM'99), October 4-6, 1999, Ottawa, Canada.
3. F. Sallabi, A. Karmouch, " Quality of Service Routing Agents for Supporting Immediate and Advance Resource Reservations " Proceedings of the 3rd Canadian Conference on Broadband Research, November 7-9, 1999, Ottawa, Canada.
4. F. Sallabi, A. Karmouch, "Resource Reservation Admission Control Algorithm with User Interactions " Proceedings of the Globecom'99, December 5-9, 1999, Rio de Janeiro, Brazil.
5. F. Sallabi, A. Karmouch, "Mobile Network Domain Agency for Managing Network Resources" Proceedings of Second International Workshop on Mobile Agents for Telecommunication Applications (mata'00), September 18-20, 2000, Paris, France.
6. Khaled Shuaib, Farag Sallabi, and Andrew Brooks, "Multi-area OSPF Network Design Considerations" presented at the IASTED International Conference on Wireless and Optical Communications (WOC 2003), July 14 to July 16, 2003, in Banff, Canada
7. Khaled Shuaib, Farag Sallabi, "Performance Evaluation of Rate Adaptive Shapers in Transporting MPEG Video over Differentiated Service Networks" Proceeding of the IASTED conference on "Communications, Internet and Information Technology"(CIIT 2003), Nov. 17-19, Arizona, USA..

8. F. Sallabi, K. Shuaib, M. Shafique, "System Level Simulator for Studying Radio Resources Management Algorithms for UMTS Networks", Proceedings of the 5th Annual Research Conference, Al Ain, United Arab Emirates, 25 – 7 , April 2004.
9. Shakil Akhtar, Khaled Shuaib, Hashir Kidwai, Farag Sallabi and Mohammed Javeed, "A Framework for the Simulation of UAE University Campus Computer Network", Proceedings of the 5th Annual Research Conference, Al Ain, United Arab Emirates, 25 – 7 , April 2004.
10. Khaled Shuaib, Farag Sallabi and Kamal Zellag, "Building Reliable and Scalable Networks", Proceedings of the 5th Annual Research Conference, Al Ain, United Arab Emirates, 25 – 7 , April 2004.
11. F. Sallabi, K. Shuaib and M. Shafique, "Performance Evaluation of Immediate and Advanced Radio Resource Reservation for UMTS Networks", Proceeding of ICMSAO'05 First International Conference on Modeling, Simulation, and Applied Optimization, American University of Sharjah, Sharjah, and UAE on February the 1st, 2005.
12. F. Sallabi, A. Lakas, M. Boulmalf and K. Shuaib "WCDMA Downlink Simulator with Efficient Wrap-Around Technique", Proceeding of the Second IEEE, IFIP International Conference on Wireless and Optical Communication Networks, WOCN 2005, Dubai, March 6-9, 2005.
13. K. Shuaib, M. Boulmalf, F. Sallabi and A. Lakas, "Performance Analysis: Co-existence of IEEE 802.11g with Bluetooth", Proceeding of the Second IEEE, IFIP International Conference on Wireless and Optical Communication Networks, WOCN 2005, Dubai, March 6-9, 2005.
14. K. Shuaib and F. Sallabi, "Extending OSPF for Large Scale MPLS Networks," Proceeding of the 25th IEEE Sarnoff Symposium, Princeton, New Jersey, USA, April 18-19, 2005.
15. Lakas, H. El-Sayed and Farag Sallabi, "Proactive QoS Provisioning in Wireless Networks", The 6th Annual Research Conference, April 24-26, 2005, Al Ain, United Arab Emirates.
16. Lakas, F. Sallabi, M. Boulmalf, K. Shuaib and H. Elsayed, "A Proactive Resource Management in 3G Networks", the Seventh IFIP International Conference on Mobile and Wireless Communication Networks Marrakech, Morocco, 19-21 September 2005.
17. K. Shuaib, M. Boulmalf, F. Sallabi and A. Lakas, "Co-existence of Zigbee and WLAN, A Performance Study" Proceeding of the IEEE Wireless Telecommunications Symposium (WTS) 2006, Pomona, CA, April 27-29, 2006.
18. F. Sallabi, M. Hayajneh, W. Ibrahim, "QOS Issues in OFDMA Based Wireless Networks", The Second International Conference on Modeling, Simulation, and Applied Optimization, Abu Dhabi, UAE, March 24-27, 2007
19. H. Khatib, F. Sallabi, "A Framework for Dynamic Location-Based Services via Web Services", International Conference on Enterprise Information Systems and Web Technologies, Orlando, FL, SA, July 9-12, 2007.
20. F. Sallabi and H. Khatib, "QoS Evaluation of In-Vehicle Telematics System", Proceedings of the 9th Annual Research Conference, Al Ain, United Arab Emirates, 21– 23 , April 2008.
21. M. Fadel, A. Hussein, F. Sallabi, A. Jaffar and H. El Khatib," Applying Mobile Computing Technology in Traceability of a Poultry Production System", 2008 ASABE Annual International Meeting, Providence, Rhode Island, USA, June 29 – July 2, 2008.
22. Farag Sallabi and Khaled Shuaib, "Downlink Call Admission Control Algorithm with Look-Ahead Calls for 3GPP LTE Mobile Networks", IWCMC'09, June 21–24, 2009, Leipzig, Germany.
23. Farag Sallabi, George Ditsa, Ezedin Barka, and Hazem Al Khatib, "Business Model for Emerging Real-Time Location-Based Services: A Technical Perspective," Proceeding of the International Conference on Wireless Information Networks and Systems (WINSYS 2010), July 26-28, 2010, Athens, Greece.
24. Shuaib, K.; Sallabi, F. "Smoothing of video transmission rates for an LTE network," IEEE 6th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), October 11-13, 2010, Niagara Falls, ON, Canada.
25. Farag Sallabi and Khaled Shuaib, "Modeling of Downlink Wireless Fading Channel for 3GPP LTE Cellular System," The 6th IEEE-GCC Conference and Exhibition for Sustainable Ubiquitous technology, February 19-22, 2011, Dubai, UAE.
26. Farag Sallabi, Ali Abu Odeh, and Khaled Shuaib, "Performance Evaluation of Deploying Wireless Sensor Networks in a Highly Dynamic WLAN and a Highly Populated Indoor Environment," The 7th International Wireless Communications and Mobile Computing Conference (IWCMC-2011), July 5-8, 2011, Istanbul, Turkey.

27. Mariam AlNuaimi, Farag Sallabi and Khaled Shuaib, "A Survey of Wireless Multimedia Sensor Networks Challenges and Solutions," The 7th International Conference on Innovations in Information Technology, April 25-27, 2011, Abu Dhabi, UAE.
28. A. M. Gaouda, Farag Sallabi, A. H. El-Hag and M.M.A. Salama, "Zigbee Performance During Sever Interruptions in Electric Power Systems," 11th International Conference in Electrical Power Quality and Utilization, October 17-19, 2011, Lisbon, Portugal.
29. E. Barka, F. Sallabi, and A. Hosani, "Managing Access and Usage Controls in SNMP," Computers, Communications and IT Applications Conference (COMCOMAP 2012), January 11-13, 2012, Hong Kong, China.