

HODA AMER

College of Engineering
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CAREER PROFILE

Ten years of experience as an Instructor at the College of Information Technology (CIT) and the College of Engineering (COE), UAE University plus nine years of industrial experience in software design, development, and testing of real-time and distributed object oriented systems.

During my eight years of experience at the CIT, I have been the lecture and/or the lab instructor for a variety of courses on Java programming, Web-based applications, Databases, Operating systems, Mobile Commerce and IT Project Management. I have also helped in many web-based and iPad application graduation projects. At the COE, I have been teaching an “Introduction to Programming in C” course for the first year Engineering students as well as a “Differential Equations and Engineering Applications” lab that uses MATLAB as an environment.

In addition to my new courses at the COE, I was involved in the iPad course development as part of the new UAEU iPad project for adopting iPad device as learning and teaching technology for first year Engineering students.

PERSONAL INFORMATION

Nationality: Canadian
Marital Status: Married

EDUCATION

Masters of Engineering, Department of Systems and Computer Engineering, Carleton University, May 2001.

Thesis: Automated Transformation of UML Software Specifications into LQN Performance Models using Graph-Grammar Techniques

Bachelor of Science with Highest Honors, Computer Science Department, the American University in Cairo (AUC), Jan. 1993.

GPA: 3.98/4.00

Major: Computer Science.

Minor: Mathematics.

SOFTWARE SKILLS

- Java, Java script, C, C++, and HTML5 programming languages
- Web-based development using Java Servlets
- Oracle Database systems
- Unix systems with Ubuntu operating system
- Parallel programming applications using CUDA on GPUs

PUBLICATIONS

1. H. Amer, and W. Ibrahim, "Using the iPad as a Pedagogical Tool to Enhance the Learning Experience for Novice Programing Students," IEEE Engineering Education Conference (EDUCON14), Istanbul, Turkey, Apr. 2014, in press.
2. W. Ibrahim, V. Beiu, and H. Amer, "Reliability Optimized CMOS Gates," 11th IEEE International Conference on Nanotechnology, Portland, USA, Aug. 2011, pp. 730–734.
3. W. Ibrahim, V. Beiu, and H. Amer "Reliability of Full Adder Cells from the Device-Level," 10th IEEE Conference on Nanotechnology IEEE-NANO'10 Seoul, Korea, Aug. 2010, pp 1082–1087.
4. W. Ibrahim, H. El-Sayed, A. El-Chouemie, and H. Amer "An adaptive multi-objective heuristic algorithm for VLSI test vectors selection," European Journal of Operational Research, vol. 199, no. 3, Dec. 2009, pp. 630-639 (IF 1.627, 5 years IF 2.084)
5. W. Ibrahim, V. Beiu, and H. Amer, "Why should we care about the input vectors," Proc. IEEE North East Workshop on Circuits and Systems (NEWCAS- TAISA'09), Toulouse, France, Jun. 2009, pp. 1-4.
6. W. Ibrahim, A. Beg, and H. Amer "A Bayesian Based EDA Tool for Accurate VLSI Reliability Evaluations," Inter. Conf. on Innovations in Information Technology (Innovations'08), Al Ain, UAE, Dec. 2008, pp. 102–105.
7. W. Ibrahim, H. Amer, "An Adaptive Genetic Algorithm for VLSI Test Vector Selection", IASTED ASM06, Rhodes, Greece, June 2006.
8. W. Ibrahim, A. El-Chouemi, and H. Amer, "A Two-Phase Genetic Algorithm for VLSI Test Vector Selection", IEEE WCCI06, Vancouver, Canada, July 2006.
9. Hoda Amer, "Automated Transformation of UML Software Specifications into LQN Performance Models using Graph-Grammar Techniques", M.Eng. Thesis, May 2001.
10. Dorina C. Petriu, Hoda Amer, Shikharesh Majumdar, Istabrak Abdul-Fatah: Using analytic models predicting middleware performance. Workshop on Software and Performance 2000: 189-194

TEACHING PROFILE

Taught Courses:

Fall 2012- Fall 2014

- Introduction to Programming (COE)
- Differential Equations and Engineering Applications (COE)

Spring 2012

- Database Systems
- Data Structures
- IT Project Management & Exh.
- Senior Project I

Fall 2011

- Object Oriented Programming (**Lecture**)
- Operating Systems (**Lecture**)
- Data Structures

Spring 2011

- Principles of IT (**Lecture**)
- Operating Systems (**Lecture**)
- Game development

Fall 2010

- Operating Systems (**Lecture**)
- Data Structures
- Database Systems
- Software Design

Spring 2010

- Web-based Applications (**Lecture & Lab**)

	• Software Design • Database Systems
Fall 2009	• Database Systems • Software Design
Spring 2009	• Software Requirements • Web-based Applications (Lecture & Lab)
Fall 2008	• Database Systems • Software Design
Spring 2008	• Operating Systems • Web-based Applications (Lecture & Lab) • Mobile Commerce • Secure Mobile Code
Fall 2007	• Data Structures • Database Systems
Spring 2007	• Object Oriented Programming • Operating Systems • User Interface Design
Fall 2006	• Database Systems • Operating Systems • User Interface Design
Spring 2006	• Data Structures (Lecture & Lab) • Software Engineering
Fall 2005	• User Interface Design • Operating Systems
Spring 2005	• Object Oriented Programming • Software Construction
Fall 2004	• Web-based Applications • Data Structure • Professional Responsibilities

SERVICE PROFILE

iPad Education

I participated in two workshops (Fall 2013 and Spring 2014) on using the iPad as a pedagogical tool for UAE University professors and instructors. The workshops aimed at introducing the iPad as a pedagogical tool in different university colleges, such as the college of Engineering and the University foundation program.

Professional Development Activities

Received a CETL certificate in Educational Technology with honors for exceptional effort and contribution.

COE Committee Work

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| • Member of the “Quality Circle and Seminars” committee | 2012-2014 |
| • Member of the “Website Maintenance” committee | 2013-2014 |
| • Member of the “Education Development” Committee | Fall-2014 |

COE Workshops

- Programming Club, Fall 2012

I started a programming club for the first year students to spread the idea that programming is fun and is feasible to all students. The idea also included exploring different programming environments such as Scratch, Alice, and HTML5.

CIT Committee Work

- CIT Faculty Organization Executive Committee, Instructor representative, 2010 – 2011

- Annual Evaluation Task Force, Member, 2009 – 2010

The task force was formed to define the annual evaluation procedures and policies as well as the evaluation criteria for both faculty and instructors.

- Instructor Committee, Secretary, 2008 – 2009

The instructor committee's main concern was discussing and evaluating the major issues that face instructors in the CIT.

- Social committee, Chair, 2007 – 2009

I was able to plan and implement some social activities with the aim of bringing the college staff and their families closer in a welcoming and friendly environment.

- Social committee, Member, 2006 – 2007

CIT Workshops

- Debugging Workshop, Spring 2010 – Fall 2011

For four consecutive semesters starting from Spring 2010 I have developed and delivered a successful workshop for the CIT female students on Debugging using Eclipse and Net-beans.

University Services

I participated in preparing and delivering a 3-hours hands-on workshop for the *Residential College students* on "Building your Own Website". It included information about the technologies and techniques used in developing a static website suitable for personal usage. About 20 students attended this workshop. The workshop was delivered on May 23rd 2010.

Internship supervision:

I was given the responsibility of supervising the following students during their internship semester.

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|---------------|---|
| • Spring 2012 | 2 students, Al Ain Distribution Company (Injazat) |
| • Fall 2011 | 3 students, UAE University, UITS |
| • Spring 2011 | 4 students, UAE University, UITS |
| • Fall 2010 | 5 students, Al Ain Distribution Company (Injazat) and Transco |
| • Spring 2010 | 2 students, UAEU IT College |

Mentoring

Since Spring 2010, I assign from four to six hours each week for mentoring students who need help in various programming problems.

CIT Annual Events

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| • IT Marathon | 2014 | Judging the IT Contest |
| • IT Marathon | 2013 | Judging the IT Contest |
| • IT Marathon | 2012 | Registration Chair |
| • IIT Conference | 2012 | Publication Committee |
| • IT Marathon | 2011 | Registration and Judging Committees |

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| • IIT Conference | 2011 | Publication Committee |
| • IT Marathon | 2010 | Registration and Judging Committees |
| • IT Marathon | 2009 | Judging committee |
| • National Programming Contest | 2009 | Registration Committee |
| • IT Marathon | 2008 | Registration and Judging Committees |
| • IIT Conference | 2008 | Registration committee |
| • National Programming Contest | 2008 | Registration Committee |

INDUSTRIAL EXPERIENCE

IBM, Rational Software, Ottawa, Canada

Position: Staff Software Engineer

Oct 2000 – July 2004

Eclipse CDT: The C/C++ Development Tools project (CDT) provides a rich C and C++ Integrated Development Environment (IDE) for the Eclipse Platform.

Duties Performed:

- Designed and implemented the Content Assist engine for the C++ editor. The engine parses the current editing context and provides the user with relevant completion proposals for easier and more accessible coding.
- Refactored the CDT core model, the UML presentation of the edited code. The core model has been redesigned to introduce an object oriented hierarchy.
- Designed and implemented the CDT Outline view. The outline view displays the UML presentation of the file that is currently open in the editor including the content and image providers.
- Designed and implemented the CDT core model working copies. Working copies are in-memory representation of the files currently open in the CDT editor. Working copies are essential for CDT core model clients to access what the user is currently editing as opposed to the saved version.
- Designed and implemented the CDT new class wizard.
- Designed and implemented the Rename Refactoring wizard.

Rational XDE®: IBM Rational XDE offers software designers and developers a rich set of model-driven development and runtime analysis capabilities for building quality software applications.

Duties Performed:

- Designed and implemented the State Machine Design Automation (SMDA) add-on. While using the XDE to design a UML state machine, the SMDA listens to the generated events and dynamically generates Java/C# code that represents the states, transitions, and triggers of the UML state machine under development.

Rational RoseRT®: Rational Rose Real-time is a modeling tool widely used by telecommunication community to model real-time applications and protocols.

Duties Performed:

- Developed a tool that externalizes locally built libraries.

Nortel Networks Corporation, Ottawa, Canada

Position: Senior Software Engineer

May 1998 – Sep 2000

Passport multi-service switch: Nortel Networks Passport carrier-grade multi-service switches deliver a variety of data, voice, and video services.

Duties Performed:

- Designed and implemented the IP CoS (Class of Service) feature for the Passport 15000 platform. The IP CoS deals with classifying the incoming IP packets and assigning a certain priority to each class.
- Wrote and executed the IP CoS test plan.

OPTera Packet Core: Nortel Networks OPTera Packet Core is an optically aware terabit router for core IP switching.

Duties Performed:

- Studied and analyzed the performance of different distributed inter-process messaging subsystems (e.g. CORBA, RASE, sockets synchronous and asynchronous).

Wireless CDMA BTS: CDMA Metro Cell Base-Station Transceiver System (MC-BTS) provides CDMA service providers with flexibility and scalability and the best in-class capacity and performance.

Duties Performed:

- Wrote and executed the Flash memory test plan.

Sakhr Software, Cairo, Egypt

March 1993 – April 1996

Sakhr is the world leader in Arabic language processing technology.

Position: Senior Software Engineer and Team Coordinator

- Provided Arabic support for MS windows OS and several windows applications.
- Coordinated a team of 4 designers that provided Arabic solution for several English educational programs.