Omar El Ariss

East Texas A&M University (ETAMU)
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Education

Ph.D., Computer Science, 2007 - 2011
North Dakota State University, Fargo, ND
Dissertation Title: Towards Enhanced System Dependability: Integrating Safety-Threat Analysis with Functional Modeling

M.S., Computer Science, 2001 - 2005
Lebanese American University, Beirut, Lebanon
Thesis Title: CASRA - Colloquial Arabic Speech Recognition Application

B.S., Computer Science, 1998 - 2001
Lebanese American University, Beirut, Lebanon

Professional Experience

August 2021 - Present
Associate Professor, Department of Computer Science & Information Systems, East Texas A&M University.

August 2017 – August 2021
Assistant Professor, Department of Computer Science & Information Systems, Texas A&M University-Commerce.

August 2011- August 2017
Assistant Professor, Department of Computer Science and Mathematical Sciences, Penn State Harrisburg.

2009 – July 2011
Teaching Assistant, North Dakota State University, Fargo, ND

2007 - 2009
Research Assistant, North Dakota State University, Fargo, ND
- Done research on model checking for aspect oriented programs.
- Done research on GUI based testing for the NDSU VCell educational game.

2005 - 2006
Assistant Researcher, Lebanese American University, Beirut, Lebanon

2003 - 2004
Analyst-Programmer, Unilog Liban, Mkalles, Lebanon

2001 - 2003
Graduate Assistant, Lebanese American University, Beirut, Lebanon

Teaching Experience

Taught the following courses at Texas A&M - Commerce:

- COSC 1436 (Introduction to Computer Science & Programming)
- COSC 1437 (Programming Fundamentals II)
- COSC 2336 (Data Structures and Algorithms)
- CSCI 303 (Technical Communication for Computer Professionals)
- CSCI 352 (Digital Forensics)
- CSCI 359 (Systems Analysis & Design)
- CSCI 371 (Natural Language Processing)
- CSCI 440 (Applied Software Project Development)
- CSCI 513 (Python Programming for AI)
- CSCI 527 (Advance Databases)
- CSCI 530 (Operating Systems)
- CSCI 538 (Artificial Intelligence)
- CSCI 548 (Software Testing)
- CSCI 554 (Digital Forensics)
- CSCI 595 (Research Literature & Techniques)

Taught the following courses at Penn State Harrisburg:

- CMPSC 121 (Introduction to Programming Techniques)
- CMPSC 122 (Intermediate Programming)
- CMPSC 221 (Object Oriented Programming with Web-Based Applications)
- CMPSC 460 (Principles of Programming Languages)
- CMPSC 470 (Compiler Construction)
- CMPSC 497 (Software Testing)
- CMPSC 497 (Natural Language Processing)
- COMP 511 (Design and Analysis of Algorithms)
- COMP 516 (Advanced Programming Languages)
- COMP 594 (Master's Studies class)
- COMP 597 (Digital Forensics)
- COMP 597 (Software Testing)
- COMP 597 (Natural Language Processing)

Publications

Journal Articles

1. Omar El Ariss, Kaoning Hu. ResNet-based Parkinson's Disease Classification, IEEE Transactions on Artificial Intelligence, vol. 4, no. 5, pp. 1258-1268, Oct. 2023.
2. Weifeng Xu, Dianxiang Xu, Abdulrahman Alatawi, Omar El Ariss, and Yunkai Liu. Statistical Unigram Analysis for Source Code Repository. *International Journal of Semantic Computing*, vol. 12, no. 2, pp. 237–260, 2018.
3. Issam Abu-Mahfouz, Omar El Ariss, A. H. M. Esfakur Rahman, & Amit Banerjee. Surface Roughness Prediction as a Classification Problem Using Support Vector Machine. *International Journal of Advanced Manufacturing Technology (JAMT), Springer, vol. 92, no. 1, pp. 803–815, Sep. 2017.*
4. Omar El Ariss, Steve Bou ghosn, & Weifeng Xu. Testing Software Using Swarm Intelligence: A Bee Colony Optimization Approach. *EAI Endorsed Transactions on Collaborative Computing, 2* (8), 2016.
5. Weifeng Xu, Tao Ding, Dianxiang Xu, & Omar El Ariss. Mining Decision Trees as Test Oracles

for Java Bytecode. *International Journal of Computers and Their Applications (ISCA), 23*(3), 141-159, 2016.

6. Dianxiang Xu, Omar El Ariss, Weifeng Xu, & Linzhang Wang, Testing Aspect-Oriented Programs with Finite State Machines, Journal of Software Testing, Verification and Reliability, *22*, 267-293, 2012.
7. Bouchaib Falah, Kenneth Magel, & Omar El Ariss, A Complexity Based Regression Test Selection Strategy, Computer Science & Engineering: An International Journal (CSEIJ), 2012.
8. Omar El Ariss, Dianxiang Xu, Secure System Modeling: Integrating Security Attacks with Statecharts, International Journal of Software and Informatics, Special issue on Software Modeling and Meta-Modeling. 6(2): 271-306, 2012.
9. Omar El Ariss, Dianxiang Xu, W. Eric Wong, Integrating Safety Analysis with Functional Modeling, IEEE Transactions on Systems, Man, and Cybernetics, IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans, vol. 41, no. 4, pp. 610-624, July 2011.
10. Dianxiang Xu, Omar El Ariss, Weifeng Xu, Linzhang Wang, Aspect-Oriented Modeling and Verification with Finite State Machines, Journal of Computer Science and Technology, 24(5): 949-961, Sept. 2009.
11. Ramzi Haraty and Omar El Ariss, CASRA+: A Colloquial Arabic Speech Recognition Application. American Journal of Applied Sciences. ISSN: 1546-9239. 2006.

Book Chapters

- Omar El Ariss, Dianxiang Xu, System Modeling with UML State Machines, Handbook of Finite State Based Models and Applications, Jiacun Wang (Editor), (pp. 371-386). Boca Raton, FL: Chapman & Hall, 2013.

Conference Papers

1. Dongeun Lee, Omar El Ariss, Kaoning Hu, Kibum Kwon, Jonathan Tapia. Fostering Computational Thinking in CS1 through Multilingual Game Development, Proceedings of the 30th ACM Conference on Innovation and Technology in Computer Science Education, 2025, pp. 424-430.
2. Dongeun Lee, Omar El Ariss, Kaoning Hu, Kibum Kwon. Multilingual Game Programming to Enhance Computational Thinking in CS0, Proceedings of the 30th ACM Conference on Innovation and Technology in Computer Science Education, 2025, pp. 660-666.
3. Dongeun Lee, Kaoning Hu, Omar El Ariss. Multiple Programming Languages for Improving Computational Thinking in CS1, Proceedings of the 54th ACM Technical Symposium on Computer Science Education V. 2 (SIGCSE 2023), abstract paper.
4. Loai Alnemer, Bayan Alammouri, Jamal Alsakran, Omar El Ariss, Enhanced Classification of Sentiment Analysis of Arabic Reviews, Lecture Notes in Computer Science: Advances in Internet, Data and Web Technologies, Cham, 2019, pp. 210–220.
5. Eduardo Luna, Omar El Ariss, Edroid: A Mutation tool for Android Apps. *Proc. of the IEEE 6th International Conference on Software Engineering Research and Innovation* (CONISOFT), 2018, pp. 99–108.
6. Omar El Ariss, Loai Alnemer, Morphology based Arabic Sentiment Analysis of Book Reviews. Lecture Notes in Computer Science (*Proc. of the 18th International Conference on Intelligent Text Processing and Computational Linguistics)*, 2017, Budapest, Hungary, pp. 115–128.
7. Weifeng Xu, Dianxiang Xu, Omar El Ariss, Yunkai Liu & Abdulrahman Alatawi, Statistical Unigram Analysis for Source Code Repository, *Proc. of the Third IEEE International Conference on Multimedia Big Data (BigMM'2017)*. April 2017, Laguna Hills, California, USA.

8. Weifeng Xu, Omar El Ariss & Yunkai Liu, An Empirical Study of Control Flow Graphs for Unit Testing. *Proc. of the 14th International Conference on Information Technology: New Generations (ITNG 2017).* April 2017, Las Vegas, Nevada.
9. Sathyanarayanan Subramanian, Thomas Singleton, & Omar El Ariss, Class Coverage GUI Testing for Android Applications. *Proc. of the 2016 International Conference on System Reliability and Science,* November 2016, Paris, France.
10. Saket Kumar, Omar El Ariss, Word Sense Disambiguation Using Swarm Intelligence: A Bee Colony Optimization Approach. Lecture Notes in Computer Science (*Computational Linguistics and Intelligent Text Processing*. CICLing) 2016, vol 9623, pp 479-495.
11. Omar El Ariss, Steve Bou ghosn, Weifeng Xu, Testing Software Using Swarm Intelligence: A Bee Colony Optimization Approach, *Proc. of the 9th EAI International Conference on Bio-inspired Information and Communications Technologies*, Dec. 3–5, 2015, New York City, USA.
12. Weifeng Xu, Omar El Ariss, A JVM-based Testing Harness for Improving Component Testability. *Proc. of the 27th International Conference on Software Engineering and Knowledge Engineering (SEKE 2015)*: June 2015, Pittsburgh, USA.
13. Omar El Ariss, Dianxiang Xu, Jianfei Wu, Towards an Enhanced Design Level Security: Integrating Attack Trees with Statecharts, *Proc. of the 5th International Conference on Secure Software Integration and Reliability Improvement (SSIRI 2011)*, June 27-29, 2011, Korea.
14. Omar El Ariss and Dianxiang Xu, Modeling Security Attacks with Statecharts, *Proc. of the 2nd International ACM Sigsoft Symposium on Architecting Critical Systems (ISARCS 2011)*, June 20-24, 2011, Boulder, USA.
15. Omar El Ariss, Dianxiang Xu, Santosh Dandey, Brad Vender, Phil McClean, and Brian Slator, A Systematic Capture and Replay Strategy for Testing Complex GUI based Java Applications, *Proc. of the 7th International Conference on Information Technology: New Generations (ITNG'10)*, April 2010, Las Vegas, USA.
16. Jianfei Wu, Anne Denton, Omar El Ariss, and Dianxiang Xu, Mining for Core Patterns in Stock Market Data, *Proc. of the* 3rd *International Workshop Mining Multiple Information Sources (MMIS'09)*, In conjunction with ICDM 2009, December 2009, Miami, USA.
17. Omar El Ariss, Dianxiang Xu, W. Eric Wong, Yuting Chen, Yann-Hang Lee: A Systematic Approach for Integrating Fault Trees into System Statecharts. *Proc. of the 32nd IEEE International Computers, Software, and Applications Conference (COMPSAC)*. 120-123, 2008.
18. Ramzi Haraty and Omar El Ariss, Lebanese Colloquial Arabic Speech Recognition. *Proc. of the ISCA 18th International Conference on Computer Applications in Industry and Engineering (CAINE-2005)*. November 2005, Hawaii, USA.
19. Ramzi Haraty, Omar El Ariss and Peter Atallah, MLS/ERD: A Tool for Building Multilevel Secure Entity Relationship Diagrams. *Proc. of the International Conference on Research Trends in Science and Technology*. March 2002, Beirut, Lebanon.

Grants & Awards

- National Science Foundation (NSF) - Scholarships in Science, Technology, Engineering, and Mathematics (SSTEM: EHR), "Computer Science as a Career (CSAC) Scholarship Program", (co- Principal Investigator), $4,939,545, August 2022 - July 2027.
- National Science Foundation (NSF) - Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR), "Multilingual Computational Thinking: Teaching Introductory Programming Classes Through Low-Level and High-Level Programming Languages", (Principal Investigator), $300,000, September 2020 - August 2024.
- TAMUC Presidential GAR Initiative, "Creating a Fine-grained Hate Speech corpora on Religious and Race-related Hate Speech", (Principal Investigator), August 2021 - May 2022.
- TAMUC Presidential GAR Initiative, "Introducing Software Testing to Novice Programmers

Through the Use of an Educational Game", (Principal Investigator), $22,340, August 2019 - August 2020.
- Penn State Research Council Grant, "Model Checking for Functional and Threat Behavior of Software", (Principal Investigator), $7,320, June 2012 - May 2013.
- ND NASA EPSCoR Graduate Student Research award, “Automated Generation of Safety Tests”, (Advisor: Dianxiang Xu) $9,160, Nov. 2007 - August 2008.

Professional Activities & Services

Co-Editor:

- Guest co-editor for the special topic issue on "Advances in Petri Nets for Software Engineering & Knowledge Engineering", International Journal of Software Engineering and Knowledge Engineering (IJSEKE), 2012.

Referee

- IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans
- IEEE Transactions on Systems, Man, and Cybernetics - Part C (Applications and Reviews)
- Journal of Software Engineering and Applications
- International Conference on Software Engineering and Knowledge Engineering (SEKE): '13, '14, '15, '16, '17, '18
- IEEE International Computers, Software, and Applications Conference (COMPSAC): '14, '15, '16, '18
- International Conference on Bio-inspired Information and Communications Technologies (BICT): '14, '15
- International Conference on System Reliability and Safety (ICSRS): '16, ‘17
- CRC Press Forensic book review.