

# MAMDOUH ALENEZI, PhD

College of Computer and Information Sciences



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## EDUCATION

### Ph.D. Software Engineering

North Dakota State University, Fargo, ND

Thesis: "A New Coupling Metric: Combining Structural and Semantic Relationships"

June 2014

### M.S. Software Engineering

DePaul University, Chicago, IL

June 2011

### B.S. Computer Science

Prince Sultan University, Riyadh

March 2010

## CONSULTANCY and FUNDING EXPERIENCE

### Wisconsin Falconers Association

Building a reservation system for visitors. People from around the globe come and visit this association at certain times to visit certain types of birds prey.

April 2011

### National Information Solutions Cooperative (NISC)

Helped them in transforming the billing management system of Walmart to a web service. The aim of the project was to help Branch managers to access utility bills on their mobile devices

March 2013

### Saudi Telecom Company (STC)

A medium-size consultation project between STC and Prince Megren Data Mining Center (MEGDAM). The aim was to reducing repeated calls to improve field operations performance.

May 2016

### King Abdulaziz City for Science and Technology (KACST)

Dynamic Capacity Provisioning in Cloud-Based Network. The aim is to handle the challenge of resource allocation in a cloud-based network. The model will handle advance and online reservation resource requests. (163,200 SAR).

January 2017

## TEACHING EXPERIENCE

### Gifted High-school Students

Mobile Development using Visual Studio

2009

### Prince Sultan University

SE 201: Introduction to Software Engineering

SE 211: Software Construction

SE 311: Software Requirements Engineering

SE 322: Software Design & Architecture

SE 353: Building Secure Software Systems

SE 401: Software Quality Assurance & Testing

SE 415: Group Dynamics & Professional Practice

2014 to Present

## WORK EXPERIENCE

### Dean of Educational Services

Prince Sultan University

Sep 2018 to Present

### Associate Professor (Department of Computer Science)

Prince Sultan University

Dec 2018 to Present

### Chief Information & Technology Officer

Prince Sultan University

Sep 2016 to Aug 2019

### General Supervisor of Information Technology & Computing Services

Prince Sultan University

March 2016 to Aug 2016

### Chairman of the Department of Computer Science

Prince Sultan University

Sep 2015 to Aug 2016

### Assistant Professor (Department of Computer Science)

Prince Sultan University

Sep 2014 to Dec 2018

#### New Course Development

- SE 211: Software Construction
- SE 311: Software Requirements Engineering
- SE 415: Group Dynamics & Professional Practice

#### Master degree curriculum development

- Participated in development of MS in Software Engineering program
- Participated in development of MS in Cybersecurity Engineering program

#### Service and Administration

- University level Examination Committee
- PSU Institutional Policy Committee
- Institutional Strategic Planning Committee
- ABET Steering Committee
- Institutional Technology and Quality Committee
- Institutional Executive Research Committee

#### Master Thesis Committee

- A Context-Aware Personalization Model for Augmented Reality Applications
- User Experience Dimensions, Aspects, and Measures: Systematic Literature Review
- Software Architecture Stability Evolution in Open Source Object-Oriented Systems

## PUBLICATIONS

### JOURNAL ARTICLES

J-50	Alka Agrawal, <b>Mamdouh Alenezi</b> , Rajeev Kumar and Raees Ahmad Khan: "Securing Web Applications through a Framework of Source Code Analysis." Journal of Computer Science, Volume 15, Issue 12, pp. 1780 - 1794 December 2019.
J-49	Nada Alsolami, Qasem Obeidat, and <b>Mamdouh Alenezi</b> : "Empirical Analysis of Object-Oriented Software Test Suite Evolution." International Journal of Advanced Computer Science and Applications(IJACSA), Volume 10, Issue 11, pp. 89 - 98 November 2019.
J-48	<b>Mamdouh Alenezi</b> , Mohammed Akour, and Hiba Alsghaier: "The Impact of Co-evolution of Code Production and Test Suites through Software Releases in Open Source Software Systems." International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume 9, Issue 1, pp. 2737 - 2739 November 2019.
J-47	Alka Agrawal, <b>Mamdouh Alenezi</b> , Rajeev Kumar, and Raees Ahmad Khan: "Measuring the Sustainable-Security of Web Applications Through a Fuzzy-Based Integrated Approach of AHP and TOPSIS." IEEE Access, Volume 7, pp. 153936 - 153951 November 2019.
J-46	Alka Agrawal, <b>Mamdouh Alenezi</b> , Rajeev Kumar, and Raees Ahmad Khan: "A source code perspective framework to produce secure web applications." Computer Fraud & Security, Volume 2019, Issue 10, pp. 11 - 18 October 2019.
J-45	Faraz Idris Khan, Yasir Javed, and <b>Mamdouh Alenezi</b> : "Security assessment of four open source software systems." Indonesian Journal of Electrical Engineering and Computer Science, Volume 16, Number 2, pp. 860 - 881 November 2019.

J-44	Faraz Idris Khan, and <b>Mamdouh Alenezi</b> : "Open Source Web-Based Software: Security Challenges and Assessment Methodologies." i-manager's Journal on Software Engineering (JSE), Volume 14, Issue 1, pp. 34 - 40 October 2019.
J-43	<b>Mamdouh Alenezi</b> , Mohammad Zarour, and Sultan Alsulis: "DevOps Development Process Awareness and Adoption -The Case of Saudi Arabia." i-manager's Journal on Software Engineering (JSE), Volume 14, Issue 1, pp. 19 - 27 October 2019.
J-42	<b>Mamdouh Alenezi</b> and Sadiq Almuairfi: "Security Risks in the Software Development Lifecycle." International Journal of Recent Technology and Engineering (IJRTE), Volume 8, Issue 3, pp. 7048 - 7055 September 2019.
J-41	Mohammad Zarour, Norah Alhammad, <b>Mamdouh Alenezi</b> , and Khalid Alsarayrah: "A Research on DevOps Maturity Models." International Journal of Recent Technology and Engineering (IJRTE), Volume 8, Issue 3, pp. 4854 - 4862 September 2019.
J-40	Hafsa Ashraf, <b>Mamdouh Alenezi</b> , Muhammad Nadeem, and Yasir Javed: "Security assessment framework for educational ERP systems." International Journal of Electrical and Computer Engineering (IJECE), Volume 9, Number 6, pp. 5570 - 5585 December 2019.
J-39	Alka Agrawal, Mohammad Zarour, <b>Mamdouh Alenezi</b> , Rajeev Kumar, and Raees Ahmad Khan: "Security durability assessment through fuzzy analytic hierarchy process." PeerJ Computer Science, 5:e215 September 2019.
J-38	Alka Agrawal, <b>Mamdouh Alenezi</b> , Dharendra Pandey, Rajeev Kumar, and Raees Ahmad Khan: "Usable-Security Assessment Through A Decision Making Procedure." ICIC Express Letters, Part B: Applications, Volume 10, Number 8, pp. 665 - 672 July 2019.
J-37	Rajeev Kumar, Mohammad Zarour, <b>Mamdouh Alenezi</b> , Alka Agrawal, and Raees Ahmad Khan: "Measuring Security Durability of Software through Fuzzy-Based Decision-Making Process." International Journal of Computational Intelligence Systems, Volume 12, Number 2, pp. 627 - 642 June 2019.
J-36	Attiq ur Rehman Jaffar, Muhammad Nadeem, <b>Mamdouh Alenezi</b> , and Yasir Javed: "Using Public Vulnerabilities Data to Self-Heal Security Issues in Software Systems." ICIC Express Letters, Volume 13, Number 7, pp. 557 - 567 July 2019.
J-35	Alka Agrawal, <b>Mamdouh Alenezi</b> , Suhel Ahmad Khan, Rajeev Kumar, Raees Ahmad Khan: "Multi-level Fuzzy System for Usable-Security Assessment." Journal of King Saud University-Computer and Information Sciences (2019).
J-34	<b>Mamdouh Alenezi</b> , Rajeev Kumar, Alka Agrawal, and Raees Ahmad Khan: "Usable-Security Attribute Evaluation Using Fuzzy Analytic Hierarchy Process." ICIC Express Letters, Volume 13, Number 6, pp. 453 - 460 June 2019.
J-33	<b>Mamdouh Alenezi</b> , Muhammad Usama, Khaled Almustafa, Waheed Iqbal, Muhammad Ali Raza, and Tanveer Khan: "An Efficient, Secure, and Queryable Encryption for NoSQL-Based Databases Hosted on Untrusted Cloud Environments." International Journal of Information Security and Privacy (IJISP), Volume 13, Issue 2, pp. 14 - 31 (2019).
J-32	Park Youngeun and <b>Mamdouh Alenezi</b> : "Predicting the Popularity of Saudi Multinational Enterprises Using a Data Mining Technique." Journal of Management Information and Decision Sciences, Volume 21, Issue 1, (2018).
J-31	Md Tarique Jamal Ansari, Dharendra Pandey, and <b>Mamdouh Alenezi</b> : "STORE: Security Threat Oriented Requirements Engineering Methodology." Journal of King Saud University - Computer and Information Sciences (2018).
J-30	<b>Mamdouh Alenezi</b> , Mohammad Zarour, and Khawlah Alomar: "Are Open Source Web Applications Secure? Static Analysis Findings." International Journal of System and Software Engineering, Vol. 6, No. 2, pp. 1 - 9 (2018).
J-29	<b>Mamdouh Alenezi</b> and Mohammad Zarour: "An Empirical Study of Bad Smells during Software Evolution Using Designite Tool." i-manager's Journal on Software Engineering, 12(4), 12-27 (2018)
J-28	Yasir Javed, <b>Mamdouh Alenezi</b> , Mohammed Akour and Ahmad Alzyod: "Discovering the Relationship Between Software Complexity and Software Vulnerabilities." Journal of Theoretical and Applied Informtion Technology, Vol. 96, No. 14, pp. 4690 - 4699 (2018).
J-27	<b>Mamdouh Alenezi</b> , Shadi Banitaan, and Mohammad Zarour: "CLUBA: A Clustering-Based Approach for Bug Assignment." International Journal of System and Software Engineering, Vol. 6, No. 1, pp. 1 - 9 (2018).
J-26	Muhammad Abdullah, Saad Khan, <b>Mamdouh Alenezi</b> , Khaled Almustafa, and Waheed Iqbal: "Application Centric Virtual Machine Placements to Minimize Bandwidth Utilization in Datacenters."

	Intelligent Automation and Soft Computing.
J-25	Iman Almomani and <b>Mamdouh Alenezi</b> : "Efficient Denial of Service Attacks Detection in Wireless Sensor Networks." Journal of Information Science and Engineering Vol. 34, No. 4 (2018), pp. 977 - 1000.
J-24	Layla Alrawais, <b>Mamdouh Alenezi</b> , and Mohammad Akour: "Security Testing Framework for Web Applications." International Journal of Software Innovation (IJSI) Vol. 6, No. 3 (2018), pp. 93 - 117.
J-23	Turki Alshammary and <b>Mamdouh Alenezi</b> : "Software Architecture Understandability in Object-Oriented Systems." i-manager's Journal on Software Engineering Vol. 12, No. 2 (2018), pp. 1 - 14.
J-22	Mohannad Alsayat and <b>Mamdouh Alenezi</b> : "ERP Implementation Failures in Saudi Arabia: Key Findings." International Business Management Vol. 12, No. 1 (2018), pp. 10 - 22.
J-21	<b>Mamdouh Alenezi</b> , Khaled Almoustafa and Khalim Amjad Meerja: "Cloud based SDN and NFV architectures for IoT infrastructure." Egyptian Informatics Journal (2018).
J-20	<b>Mamdouh Alenezi</b> , Shadi Banitaan and Mohammad Zarour: "Using Categorical Features in Mining Bug Tracking Systems to Assign Bug Reports." International Journal of Software Engineering & Applications (IJSEA) Vol. 9, No. 2 (2018), pp. 29 - 39.
J-19	Abdulrahman Asiri, Qasem Obiedat and <b>Mamdouh Alenezi</b> : "A Cloud-Based Cross - Enterprise Imaging Framework." i-manager's Journal on Software Engineering Vol. 12, No. 1 (2018), pp. 6 - 25.
J-18	<b>Mamdouh Alenezi</b> , Khaled Almoustafa and Mohamed Hussein: "On Virtualization and Security-Awareness Performance Analysis in 5G Cellular Networks." Journal of Engineering Science and Technology Review Vol. 11, No. 1 (2018), pp. 199 - 207.
J-17	<b>Mamdouh Alenezi</b> and Mohammad Zarour: "Software vulnerabilities detection based on security metrics at the design and code levels: empirical findings." Journal of Engineering Technology Vol. 6, No. 1 (2018), pp. 570-583.
J-16	Hassan Almousa and <b>Mamdouh Alenezi</b> : "Measuring Software Architecture Stability Evolution in Object-Oriented Open Source Systems." Journal of Engineering and Applied Sciences Vol. 12, No. 2 (2017), pp. 353-362.
J-15	Mohammed Akour, Samah Aldiabat, Hiba Alsghaier, Khalid Alkhateeb and <b>Mamdouh Alenezi</b> : "Software Architecture Understandability of Open Source Applications." International Journal of Computer Science and Information Security (IJCSIS) Vol. 14, No. 10 (2016), pp. 65-78.
J-14	Shadi Banitaan, Mohammad Akour and <b>Mamdouh Alenezi</b> : "A Test Suite Reduction Approach for Software Unit Testing." Advanced Science Letters Vol. 22, No. 10 (2016), pp. 2977-2981.
J-13	Thamer Alhamed and <b>Mamdouh Alenezi</b> : "Business Continuity Management & Disaster Recovery Capabilities in Saudi Arabia ICT Businesses." International Journal of Hybrid Information Technology Vol. 9, No. 11 (2016), pp. 99-126.
J-12	<b>Mamdouh Alenezi</b> and Yasir Javed: "Developer Companion: A Framework to Produce Secure Web Applications." International Journal of Computer Science and Information Security Vol.14, No.7 (2016), pp.12-16.
J-11	<b>Mamdouh Alenezi</b> , "Software Architecture Quality Measurement Stability and Understandability." International Journal of Advanced Computer Science and Applications(IJACSA), Volume 7 Issue 7, pp. 550-559 (2016)
J-10	Ibrahim Abunadi and <b>Mamdouh Alenezi</b> : "An Empirical Investigation of Security Vulnerabilities within Web Applications." Journal of Universal Computer Science Vol. 22, No. 4, pp. 537-551 (2016).
J-09	<b>Mamdouh Alenezi</b> and Mohammad Zarour: "Does Software Structures Quality Improve over Software Evolution? Evidences from Open-Source Projects." International Journal of Computer Science and Information Security (IJCSIS) Vol.14, No.1 (2016), pp. 61-75.
J-08	<b>Mamdouh Alenezi</b> and Ibrahim Abunadi: "Evaluating Software Metrics as Predictors of Software Vulnerabilities." International Journal of Security and Its Applications Vol.9, No.10 (2015), pp.231-240.
J-07	<b>Mamdouh Alenezi</b> and Ibrahim Abunadi: "Quality of Open Source Systems from Product Metrics Perspective." International Journal of Computer Science Issues 12.5 (2015): 143-148.
J-06	<b>Mamdouh Alenezi</b> and Fakhry Khellah. "Evolution Impact on Architecture Stability in Open-Source Projects." International Journal of Cloud Applications and Computing (IJCAC) 5.4 (2015): 24-35.
J-05	Shadi Banitaan and <b>Mamdouh Alenezi</b> : "Software Evolution via Topic Modeling: An Analytic Study." International Journal of Software Engineering and Its Applications Vol. 9, No. 5 (2015), pp. 43-52
J-04	<b>Mamdouh Alenezi</b> and Khaled Almoustafa: "Empirical Analysis of the Complexity Evolution in Open-

	Source Software Systems" International Journal of Hybrid Information Technology (IJHIT), Vol.8, No.2, 2015.
J-03	<b>Mamdouh Alenezi</b> : "Extracting High-Level Concepts from Open-Source Systems." International Journal of Software Engineering and Its Applications Vol.9, No.1, (2015).
J-02	<b>Mamdouh Alenezi</b> and Kenneth Magel: "Empirical Evaluation of A New Coupling Metric: Combining Structural and Semantic Coupling." International Journal of Computers and Applications 36(1) (2014).
J-01	<b>Mamdouh Alenezi</b> , Kenneth Magel, and Shadi Banitaan. "Efficient Bug Triaging Using Text Mining", Journal of Software 8(9), 2185-2190 (2013).

## CONFERENCE PROCEEDINGS

C-17	<b>Mamdouh Alenezi</b> and Faraz Idris Khan: "Context-Sensitive Case-Based Software Security Management System." 3rd Computational Methods in Systems and Software 2019.
C-16	<b>Mamdouh Alenezi</b> and Iman Almomani: "Empirical Analysis of Static Code Metrics for Predicting Risk Scores in Android Applications." 5th International Symposium on Data Mining Applications (SDMA2018), Riyadh, Saudi Arabia.
C-15	<b>Mamdouh Alenezi</b> and Iman Almomani: "Abusing Android Permissions: A Security Perspective." 2017 IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (AEECT), Amman, Jordan.
C-14	Khaled Almustafa and <b>Mamdouh Alenezi</b> : "Cost Analysis of SDN/NFV Architecture over 4G Infrastructure." The 8th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN-2017), Lund, Sweden.
C-13	<b>Mamdouh Alenezi</b> , Mohammed Akour, Alaa Hussien, and Mohammad Z. Al-Saad: "Test Suite Effectiveness: An Indicator for Open Source Software Quality." The 2nd International Conference on Open Source Software Computing (OSSCOM 2016), Beirut, Lebanon
C-12	<b>Mamdouh Alenezi</b> and Yasir Javed: "Open Source Web Application Security: A Static Analysis Approach." International Conference on Engineering & MIS 2016 (ICEMIS'16), Agadir, Morocco.
C-11	Yasir Javed and <b>Mamdouh Alenezi</b> : "Defectiveness Evolution in Open Source Software Systems." 4th Symposium on Data Mining Applications (SDMA 2016), Riyadh, Saudi Arabia.
C-10	Khaled Almustafa and <b>Mamdouh Alenezi</b> : "Dynamic Evolution of Source Code Topics." The Tenth International Conference on Software Engineering Advances (ICSEA 2015), Barcelona, Spain.
C-09	Ibrahim Abunadi and <b>Mamdouh Alenezi</b> : "Towards Cross Project Vulnerability Prediction in Open Source Web Applications." International Conference on Engineering & MIS 2015 (ICEMIS'15), Istanbul, Turkey.
C-08	<b>Mamdouh Alenezi</b> and Mohammad Zarour: "Modularity Measurement and Evolution in Object-Oriented Open-Source Projects." International Conference on Engineering & MIS 2015 (ICEMIS'15), Istanbul, Turkey.
C-07	<b>Mamdouh Alenezi</b> and Fakhry Khellah: "Architectural Stability Evolution in Open-Source Systems." International Conference on Engineering & MIS 2015 (ICEMIS'15), Istanbul, Turkey. 3-5
C-06	<b>Mamdouh Alenezi</b> , Shadi Banitaan, and Qasem Obeidat: "Fault-Proneness of Open Source Systems: An Empirical Analysis." International Arab Conference on Information Technology (ACIT 2014), Nizwa, Oman.
C-05	<b>Mamdouh Alenezi</b> and Kenneth Magel: "A New Coupling Metric: Blending Structural and Semantic Relations." 13th IASTED International Conference on Software Engineering (SE 2014), Innsbruck, Austria.
C-04	<b>Mamdouh Alenezi</b> and Shadi Banitaan: "Bug Reports Prioritization: Which Features and Classifier to Use?." 12th IEEE International Conference on Machine Learning and Applications (ICMLA), IEEE, 2013.
C-03	Shadi Banitaan and <b>Mamdouh Alenezi</b> : "DECOBA: Utilizing Developers Communities in Bug Assignment." 12th IEEE International Conference on Machine Learning and Applications (ICMLA), IEEE, 2013.
C-02	Shadi Banitaan and <b>Mamdouh Alenezi</b> : "TRAM: An approach for assigning bug reports using their Metadata." Third International Conference on Communications and Information Technology (ICCIT), IEEE, 2013.
C-01	Shadi Banitaan, <b>Mamdouh Alenezi</b> , Kendall Nygard, and Kenneth Magel. "Towards Test Focus Selection in Integration Testing using Method Level Software Metrics", 10th International Conference on Information Technology: New Generations (ITNG Software Testing 2013).

# Services

## Conference Chair

- 5th International Symposium on Data Mining Applications (SDMA2018)
- 6th International Conference on Data Science and Machine Learning Applications (CDMA 2020)

## Program Committee Membership

- Workshop on Machine Learning for Predictive Models (MLPM 2014), 13th IEEE International Conference on Machine Learning and Applications (ICMLA 2014).
- International Conference on Computing and Informatics (ICOCI 2015).
- The Third Information Systems International Conference (ISICO 2015).
- The Tenth International Conference on Software Engineering Advances (ICSEA 2015).
- International Conference on Computing Education and Information Technology (ICCEIT 2015).
- Workshop on Machine Learning for Predictive Models in Engineering Applications (MLPMEA 2015), 14th IEEE International Conference on Machine Learning and Applications (ICMLA 2015).
- International Conference on Computing Education and Information Technology (ICCEIT 2015).
- The 7th International Conference on Information and Communication Systems (ICICS 2016).
- The 4th Symposium on Data Mining Applications (SDMA 2016).
- The 4th Saudi International Conference on Information Technology, Big Data Analysis (KACSTIT2016).
- The Eleventh International Conference on Software Engineering Advances (ICSEA 2016).
- Special Session: Machine Learning for Predictive Models in Engineering Applications, The 18th IEEE International Conference on Machine Learning and Applications (ICMLA 2019).

## Reviewer of International Indexed Journals

- International Journal of Cloud Applications and Computing (IJCAC).
- KSII Transactions on Internet and Information Systems.
- Journal of Ambient Intelligence and Humanized Computing.
- International Journal of Software Engineering and Knowledge Engineering.
- Information and Software Technology.
- Journal of Information Security and Applications.
- ACM Computing Surveys.

## Master Students Supervision

- Hussain Alshehri - Internet of Things - Architecture of Multiple Sources Data Acquisition Sensors
- Sultan Alotaibi - An exploratory study of DevOps Awareness and Adoption in Saudi Arabia
- Abdulrahman Asiri - Cloud-based Cross-enterprise Imaging Framework
- Thamer Alhamed - Measuring the Capability of Business Continuity Management & Disaster Recovery in the Kingdom of Saudi Arabia ICT Companies
- Turki Alshammary - Software Architecture Understandability in Object-Oriented Systems
- Hassan Al-Mousa - Software Architecture Stability Evolution in Open Source Object-Oriented Systems
- Laila Al-Rowais - Framework for Security Testing of Web Applications
- Khawlah AlOmar - Static Analysis of Open-Source Web Applications