

9/2009 – 3/2012, **Jordan University of Science and Technology**, Jordan
Assistant Professor, Software Engineering Department

2/2007 – 9/2009, **Jordan University of Science and Technology**, Jordan
Assistant Professor, Computer Information Systems Department

12, 2003 – 12/ 2006, **University of Alabama in Huntsville**, USA
Teaching Assistant, Computer Science

5/2003 – 12/2003, University of Alabama in Huntsville, USA
Research Associate, Computer Science

7/2000- 12/2001, Jordan University of Science and Technology, Jordan
Lab Supervisor, Computer Science

Accreditation EXPERIENCE

- 1- Chair of the accreditation committee
 - a. Software Engineering Department from the Ministry of Higher Education, Jordan. 2009.
- 2- Member of higher education accreditation committee, Software Engineering, Jordan. 2013.
- 3- Member of the quality Assurance committee in Al Yamamah University, College of Computer Information Systems, Saudi Arabia, 2013-present.

ADMINISTRATIVE EXPERIENCE

5/9/2018 – Present, Jordan University of Science and Technology, Jordan
Acting Chair of Software Engineering Department

9/2009 – 9/2011 Jordan University of Science and Technology, Jordan
Acting Chair of Software Engineering Department

- Establishment of the Software Engineering department
- Development of the Software Engineering Curriculum according to IEEE/ACM
- Software engineering Department accreditation from the Ministry of Higher Education
- IBM Innovation Center initiative leader.
- Establishment of the department laboratories
- Recruiting people (staff members, lecturers, and lab supervisors)

AWARDS AND GRANTS RECEIVED

1. Selected among the top 2% of researchers around the world by Stanford Researchers.
Ioannidis JPA, Boyack KW, Baas J (2020) Updated science-wide author databases of standardized citation indicators. PLoS Biol 18(10): e3000918. <https://doi.org/10.1371/journal.pbio.3000918>
2. Sabbatical year from Jordan University of Science and Technology

3. Research funds from Jordan University of Science and Technology
4. IBM faculty award, \$7000

http://public.dhe.ibm.com/software/dw/university/facultyawards/2011_faculty_recipients.pdf.

This project proposes to build a smart academic advisory system to help undergraduate students to excel in their studies. The system opts to serve about 20000 students to select the courses that lead to better academic performance. The system is automated using machine learning techniques such as nearest neighbors and association rules. The system proposes multi-steps procedure of course selection based on the interaction with students. The system can be used by students and advisors as well.

5. Certificate of merit for the paper "A Quantitative Verification of the Correspondence between Design and Implementation Artifacts Using Software Metrics", 2011.
2. Received the third place in the local Imagine Cup competition conducted by Microsoft Corporation in 2010 in Jordan for the project "POS system based on Bluetooth".
3. Received travel award for the 17th ISSRE 2006 (IEEE conference sponsored by IBM, Microsoft, CISCO and other companies).
4. RA and TA (2003-2006) for the CS dept. in University of Alabama in Huntsville.
5. A scholarship to pursue M.Sc. and Ph.D. (2002-2006) from Jordan University of Science and Technology.

TEACHING EXPERIENCE

JUST

- Software Design
- Requirements Management
- Advanced Software Engineering (Graduate Level , 2010)
- Software Engineering Fundamentals
- Software Documentation
- Java Programming
- C++ Programming
- Visual Basic Programming
- Systems Analysis and Design
- Python Programming

Al Yamamah University, Riyadh

- Software Construction and User Interfaces
- Software Architecture and Design
- Software Requirements Engineering
- Data Structures and Algorithms
- Software Quality Assurance
- Software Maintenance and Evolution
- Software Verification and Validation
- Project Management

Adjunct Professor

- NYiT: Advanced System Analysis and Design (Graduate Level,)
- Yarmouk University: Software Testing (Graduate Level)
- Philadelphia University: C# programming and Formal Methods

TECHNICAL SKILLS

- Programming Languages: C, C++, Java, C# .NET, Visual Basic, Python, and SQL.
- Databases: ORACLE 8.0, MS-Access.
- Platforms: Windows, UNIX, Linux.
- Development Frameworks: Eclipse, Visual Studio .NET, Rational Rose, Microsoft Visio, CVS, JUnit testing, Borland Together for Eclipse (Metrics and auditing tools), SPSS and MiniTab statistical applications.
- Understand: Software metrics collection tools
- Borland Together: Quality metrics and auditing tools

PH.D. DISSERTATION SUPERVISED

- There is no PhD programs in JUST.

MASTER THESIS SUPERVISED

All students are from Computer Science department

1. Lauy Bani Issa, currently
2. Nedah Alsalman, Software reusability Prediction using Machine Learning Techniques
3. Waed Bani Yaseen, Bug Priority Prediction using Deep Learning
4. Sujoud Hamouri, Bug Severity Prediction using Ensemble Learning
5. Moath Zayout, Malware Classification Approaches Utilizing Binary And Text Embedding Of Permissions
6. Asem Alhawari, Classification of application reviews into software maintenance tasks using data mining techniques, 2019.
7. Amany Shatnawi, Software Prototyping from UML Diagrams using Language Independent User Interfaces, 2010.
8. Ahmad Alzu'bi, A Quantitative Assessment of the Lack of Correspondence between Design and Implementation Attributes using Object-Oriented Metric", 2009.

MASTER THESIS Examined

Many Students were examined from the following universities:

1. Jordan University of Science and Technology (JUST)
2. Al Albayt University
3. Philadelphia University
4. Yarmouk University
5. Hashemait University

SENIOR PROJECTS SUPERVISED (Sample)

I have supervised more than hundered undergrad students. This is a short list.

1. I. El-hersh, A. Abutaha, E-Learning School Site.
2. M. Obeidat, A. Al-Saleh, H. Al-mistareehi, Car Rental System.
3. A. Shurman, A. Dlabeh, Vocational Training Center.
4. S. Eshtiwi, Manager Assistant Suite.
5. M. Yassen, T. Brawish, S. Alrousan, Intra Organization Communication, and Feedback System.
6. B. Jafreh, R. Zayed, Lean Project: Education for Down syndrome Kids.
7. Q. Obeidat, B. Mahafza, MIS: Management Information system for POS.
8. D. Alshyab, Dental clinic System.
9. L. Momani, CD's Borrowing System.

CURRICULUM AND COURSE DEVELOPMENTS

- Curriculum Development for the Software Engineering Department
- Designed the Software Engineering Courses
- Designed the Software Engineering Lab courses
- Designed the Software Design course
- Designed the Software Requirements course
- Designed the Software Testing course
- Designed the Formal Methods course

ACADEMIC SERVICES

Software Engineering Department

- Quality assurance and accreditation committee
- Department Brochure
- Department vision, mission, and objectives
- Curriculum committee chair
- Research committee chair
- Promotion/appointment committee chair
- Courses description translations

Faculty of Computer & Information Technology

- Faculty Council 2009-2011, 2013, 2018.
- Promotion/appointment committee
- Accreditation and quality assurance committee

- Research Committee
- Graduate studies committee

Jordan University of Science and Technology

- Lab facilities committee (Zain wireless lab)

PROFESSIONAL ACADEMIC ACTIVITIES

Reviewer for:

1. IET Software (IET)
2. Journal of Empirical Software Engineering (Springer)
3. Multimedia Tools and Applications (Springer)
4. Journal of Intelligent & Fuzzy Systems
5. Software: Practice and Experience (Wiley Interscience)
6. Journal of Software: Evolution and Process (Wiley Interscience)
7. Software Quality Journal (Springer)
8. Journal of Computer Science and Technology (Springer)
9. Journal of the Brazilian Computer Society (Springer)
10. Journal of Information and Software Technology(Elsevier)
11. Journal of Information Sciences (Elsevier)
12. Journal of Systems and software (Elsevier)
13. Advances in engineering software (Elsevier)
14. Journal of Software Maintenance and Evolution (Wiley Interscience)
15. Int'l Journal of Software Engineering and Knowledge Engineering
16. Journal of King Saud University - Computer and Information Sciences
17. Advances in Software Engineering (Hindawii)
18. Jordanian Journal of Computers and Information Technology
19. International Journal of System Assurance Engineering and Management
20. Drasat Journal (University of Jordan)
21. IEEE International Conference on Computer Systems and Industrial Informatics
22. ITNG 2011
23. IASTED International Conference on Software Engineering and Applications
24. International Conference on Information, Communications and Signal Processing, Jordan 2010-2021.
25. 9th International Conference on Software Engineering and Applications (JSE 2020)

PROFESSIONAL AND SCIENTIFIC MEETINGS

1. How to get Accreditation from ABET for Bachelor Program, Al Yamamah University, Riyadh, KSA, 11/1/2016.
2. Mapping course Outcomes/objectives to the program Outcomes/Objectives, Al Yamamah University, Riyadh, KSA, 10/1/2016.
3. Development of Learning Outcomes & Learning Outcome Assessment Based on the NCAAA Criteria, Al Yamamah University, Riyadh, KSA, 10/1/2016.
4. IBM Cognos BI Overview, 26/8/2012.
5. IBM Cognos Report Studio: Author Professionals Reports Fundamentals, 27-29/8/2012.
6. IBM Cognos Business Insight Advanced: Author Self-Service Reports, 2-3/9/2012.
7. Developing Applications for IBM Business Process Manager Advanced V7.5 – Updated (WB751), 24-28/6/2012
8. Process Modeling & Implementation with IBM Business Process Manager V7.5, 17-21/6/2012.
9. IBM workshops on centers of excellence (Cloud computing, Service-oriented architectures, Business process management, Business analytics and process optimization, and Service science management and engineering), both JUST campus and IBM La Gaude, France, 2010.
10. 23rd Annual IEEE-CS Conference on Software Engineering Education and Training: *Building Educational Bridges*, Carnegie Mellon University, Pittsburgh, PA, USA, March 9-12, 2010.
11. “JUNet – Microsoft Academic Innovation Day”, Amman, (Grand Hyatt Hotel) in December 17th, 2007.
12. Many educational workshops were conducted on the campus of Jordan University of Science and Technology.

PUBLICATIONS

Under Review

1. Sujood Hamouri, Omar Alzoubi, Raed Shatnawi, Predicting Bug Severity Using Machine Learning and Ensemble Learning Techniques
2. Moath Zyout, Raed Shatnawi, Hassan Najadat, Malware Classification Approaches Utilizing Binary And Text Encoding Of Permissions
3. Raed Shatnawi, When does internal software quality become significantly different in large open-source systems? under review.
4. Raed Shatnawi, Ranking of bug reports into Findbug categories using BM25 function under review.
5. **Raed Shatnawi**, Evaluating Object-Oriented Metrics Thresholds for Change-Proneness.
6. **Raed Shatnawi**, Mining Stack Overflow to Discover Bug Patterns

Journals:

7. Alok Mishra, **Raed Shatnawi**, Cagtay Catal, Akhan Akbulut, Techniques for Calculating Software Metrics Threshold Values: A Systematic Mapping Study, *Applied Sciences*. 2021; 11(23):11377. <https://doi.org/10.3390/app112311377>.
8. **Raed Shatnawi** Software Fault Prediction using Machine Learning Techniques with Metric Thresholds, international journal of knowledge-based and intelligent engineering systems, kes210061., 2021.
9. **Raed Shatnawi**, Qutaibah Althebyan, Baraq Ghalib, and Mohammed Al-Maolegi, A Student Advising System using Association Rule Mining Shatnawi, IGI International Journal of Web-Based Learning and Teaching Technologies, Volume 16, Issue 3, Article 5, 2021
10. **Raed Shatnawi** & Alok Mishra, An Empirical Study on Software Fault Prediction using Product and Process Metrics, International Journal of Information Technologies and Systems Approach (IJITSA), Volume 14, Issue 1, Article 4. ,2021.
11. **Raed Shatnawi**, A Comparison of Threshold Identification Techniques for Object-Oriented Software Metrics, vol. 14, no. 6, pp. 727-738, 12 2020, doi: 10.1049/iet-sen.2020.0025..
12. Asem Alhawari, Hassan Najadat, **Raed Shatnawi**, Classification of Application Reviews into Software Maintenance Tasks Using Data Mining Techniques, Software Quality Journal, Springer. 2020.
13. **Raed Shatnawi**, Synergies and Conflicts among Software Quality Attributes and Bug Fixes, International Journal of Information Systems and Change Management, .
14. **R Shatnawi**, The application of ROC analysis in threshold identification, data imbalance and metrics selection for software fault prediction, Innovations in Systems and Software Engineering 13 (2-3), 201-217, 2017.
15. **Raed Shatnawi**, Identifying and Eliminating Less Complex Instances from Software Fault Data, International Journal of System Assurance Engineering and Management, pp 1–9.
16. **Raed Shatnawi**, An Empirical Investigation of Predicting Fault Count, Fix costs and Efforts using Software Metrics, International Journal of Advanced Computer Science and Applications (IJACSA), 7(2), 2016.
17. **Raed Shatnawi**, A Nearest Neighbors Classification of the Reusability of Libraries and Applications in Open-Source Systems, *International Journal of Software Engineering and Its Applications*, Vol. 10, No. 3 (2016), pp. 179-190.
18. Amani Shatnawi, **Raed Shatnawi**, “Generating a Language-Independent Prototypes from UML Diagrams”, IAJIT - The International Arab Journal of Information Technology, Thompson ISI (IF 0.519), Vol 13, No.3, May 2016.
19. **Raed Shatnawi**, Deriving Metrics Thresholds using Log Transformation, Journal of Software: Evolution and Process, Volume 27, Issue 2, pages 95–113, February 2015 Thompson ISI (IF 1.32).
20. **Raed Shatnawi**, Empirical study of fault prediction for open-source systems using the Chidamber and Kemerer metrics, IET Software, (2014), 8(3):113, Thompson ISI (IF 0.6) <http://dx.doi.org/10.1049/iet-sen.2013.0008>.
21. **Raed Shatnawi**, Ziad Alsharief, “A Guided Oversampling Technique to Improve the Software Fault Prediction for Imbalanced Data in Open-Source Systems”, International Journal of Knowledge Engineering and Data Mining 2012 - Vol. 2, No.2/3, 2012, pp. 200 - 214.

22. **Raed Shatnawi**, Qutaibah Althebian, "An Empirical Study of the Effect of Power Law Distribution on the Interpretation of OO Metrics", *ISRN Software Engineering Journal*, 2013, 18 pages. <http://dx.doi.org/10.1155/2013/198937>.
23. **Raed Shatnawi**, and Wei Li, "An Empirical Assessment of Refactoring Impact on Software Quality Using a Hierarchical Quality Model ", *International Journal of Software Engineering and Its Applications*, Vol. 5, No. 4, 2011, pp. 127-150.
24. **Raed Shatnawi** and Ahmad Alzu'bi, "A Verification of the Correspondence between Design and Implementation Quality Attributes Using a Hierarchical Quality Model," *IAENG International Journal of Computer Science*, Vol. 38, No. 3, 2011, pp. 225-233.
25. **Raed Shatnawi**, "A Quantitative Investigation of the Acceptable Risk Levels of Object-Oriented Metrics in Open-Source Systems," *IEEE Transactions on Software Engineering*, Vol. 36, No.2, 2010, pp.216-225. (Impact factor is 3.75 in 2009)
26. **Raed Shatnawi**, Wei Li, James Swain, and Tim Newman, "Finding Software Metrics Threshold Values Using ROC Curves," *Journal of Software Maintenance and Evolution: Research and Practice*, Vol. 22, No. 1, January 2010, pp. 1-16 (Impact factor is 1.14 in 2009).
27. **Raed Shatnawi** and Li, Wei, "The effectiveness of software metrics in identifying error-prone classes in post-release software evolution process," *Journal of Systems and Software*, Vol. 81, No. 11, 2008, pp 1868-1882. [doi:10.1016/j.jss.2007.12.794](https://doi.org/10.1016/j.jss.2007.12.794). (Impact factor is 1.34 in 2009)
28. Wei Li, and **Raed Shatnawi**, "An Empirical Study of the Bad Smells and Errors in Object-Oriented Design," *Journal of Systems and Software*, Vol. 80, No. 7, pp. 2007, pp. 1120-1128. (Impact factor is 1.34 in 2009)
29. **Raed Shatnawi**, Letha Etzkorn, and W.E. Hughes, "Comparing Object-Oriented Languages Using Design Patterns," *International Journal of Computers and Applications*, Vol. 27, No. 4, 2005, pp. 228-236.

Conferences:

1. R Shatnawi, Identifying Threshold Values of Change-Prone Modules, Proceedings of the 2018 International Conference on E-business and Mobile Commerce, 39-43.
2. R. Shatnawi, "Improving Software Fault Prediction With Threshold Values," 2018 26th International Conference on Software, Telecommunications and Computer Networks (SoftCOM), Split, 2018, pp. 1-6, doi: 10.23919/SOFTCOM.2018.8555818.
3. Raed Shatnawi, Predicting Quality of Open-Source Systems from Past Incidents, Fourth International Conference on Information and Communication Systems (ICICS 2013), April 23-25, 2013. Irbid – Jordan, pp. 120-125.
4. Raed Shatnawi, Qutaibah Althebian, Baraq Ghalib & Mohammad Molaji, Building A Smart Academic Advising System Using Association Rule Mining, Fourth International Conference on Information and Communication Systems, April 23-25, 2013, pp. 58-62.
5. **Raed Shatnawi**, Improving Software Fault-Prediction for Imbalanced Data, *Proceedings of Innovations in Information Technology (IIT)*, Alain, UAE, 2012, pp. 54-59.
6. **Raed Shatnawi** and Ahmad Alzu'bi, "A Quantitative Verification of the Correspondence between Design and Implementation Artifacts Using Software Metrics," *Proceedings of The International MultiConference of Engineers and Computer Scientists 2011*, pp721-725.

7. **Raed Shatnawi**, "A Validation of Refactorings Impact on Maintainability: A Case Study," *The IASTED International Conference on Software Engineering (SE 2010)*, February 16 – 18, 2010 Innsbruck, Austria.
8. **Raed Shatnawi**, "A Tree-Based Classification of High and Low Error-Severity Modules Using the CK Metrics," *Proceedings of the ISCA 24th International Conference on Computers and Their Applications, CATA 2009*, pp. 222-226.
9. **Raed Shatnawi**, and Wei Li, "An Empirical Study of the Boundary Values of the Object-Oriented Metrics", *the International Conference on Computer Applications in Industry and Engineering (CAINE-2006)*, Las Vegas, November 13-15, 2006.
10. **Raed Shatnawi**, "An Investigation of CK Metrics Thresholds", *The 17th IEEE International Symposium on Software Reliability Engineering (ISSRE 2006)* , Raleigh, North Carolina, USA, November 6-10, 2006
11. **Raed Shatnawi**, Wei Li, and Huaming Zhang, "Predicting Error Probability in the Eclipse Project," *International Conference on Software Engineering Research and Practice (SERP'06)*, Las Vegas, June 2006, pp. 422-428.
12. Wei Li, Huaming Zhang, and **Raed Shatnawi**, "A Graph-Based Representation of Object-Oriented Designs", *International Conference on Software Engineering Research and Practice (SERP'06)*, Las Vegas, June 2006, pp. 198-204.

REFERENCES

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