

# Nouh T. Alhindawi

## Curriculum Vitae

Associate Professor –Computer & Data Science  
Department of Software Engineering and  
Computer Science - Jadara University  
Jordan - Irbid

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### Education Vitae

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|-------------|--|------------|
| <b>2013</b> | PhD. Computer Science- Software Engineering/Data Science- Kent State University, Kent, Ohio;<br>Dissertation Title: "SUPPORTING SOURCE CODE COMPREHENSION DURING SOFTWARE EVOLUTION AND MAINTENANCE" | GPA 3.96/4 |
| <b>2006</b> | M.S. Computer Science; AL-Balqa Applied University, Jordan;<br>Thesis Title: "HYBRID TECHNIQUE FOR IMAGE COMPRESSION"  | GPA 3.73/4 |
| <b>2004</b> | B.S. Computer Science; Yarmouk University, Jordan.   | GPA (Good) |

### Work Experience

- *Assistant of the President of Jadara University* for Digital and Electronic Transformation and E- Learning, 10- 2022- Present.
- *Associate Professor*, Department of Software Engineering & Computer Science, *Jadara University*, Jordan. 7- 2022 – Present).
- *National Senior Expert*, Labour Market Oriented Vocational Education, Higher Education and Training MOVE-HET, *GFA Consulting Group, Hamburg – Germany*, 2022- 2023.
- *Director of Information Technology and E- Transformation Directorate*, Ministry of Higher Education and Scientific Research (MoHESR) – 6 -2018 – 7- 2022.
- *Director of Computer Center*, *Jadara University* -2015 - 2018.
- *Chancellor* for President of *Jadara University*, Digital Transformation Policies, Smart, Entrepreneurial Systems, and Applications, 6/10/2013 - 6/10/2015.
- *Assistant & Associate Professor*, Department of Software Engineering & Computer Science, *Jadara University*, Jordan. (2013 – 2018), (7- 2022 – Present).
- *Part Time Lecturer*. Department of Software Engineering, *Jordan University of Science and Technology (JUST)*, Irbid, Jordan. 2013 - 2017.
- *Part Time Lecturer*. Department of Computer Science, *Jordan University of Science and Technology (JUST)*. Irbid, Jordan.2006/2008, 2016/2017.
- *Part Time Lecturer*. Department of Computer Information Systems, *Jordan University of Science and Technology (JUST)*, Irbid, Jordan. 2007/2008, 2014/2015.
- Graduate and Research Assistantship, Part Time Lecturer, Department of Computer Science, *Kent State University*, USA - 2010 –2013.
- *Full Time Lecturer*. Department of Computer Science, *Ajloun College University /Al-Balqa' Applied University*, Jordan. 2008 - 2010.

- *Part Time Lecturer.* Department of Information Technology, *Al-Huson University College /Al-Balqa' Applied University*, Irbid, Jordan. 2006 - 2008.
- *Part Time Lecturer.* Department of Computer Information Systems, *Yarmouk University*, Irbid, Jordan. 9-2006 / 6- 2007.

### **Memberships and Outreach Activities**

- Member of the National Sectoral Specialized Committee for Innovative and Pioneering Projects, Scientific Research and Innovation Support Fund, MOHESR. 2021 -2022.
- Member of the National Human Resources and Informatics Development Committee - the Higher Council for Science and Technology – 2021 -2022.
- Member of the Steering Committee for the National Qualifications Framework, Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI) – 2020 - Still.
- Member of the Supreme Steering Committee of the Scientific Research Support Fund for the Communications and Information Technology Sector, 2021-2022.
- Coordinator of the E-Learning Integration Research Track in Jordanian Higher Education Institutions - in the Scientific Research Support Fund for the Communications and Information Technology Sector -2021 - 2022.
- Member of the Board of the E-Learning Center at Al-Hussein Technical University 2020-Present.
- Member of the National Committee for preparing and developing the general and private framework, standards and performance indicators for Computer Course, Grades from kindergarten to the Tawjihi. National Center for Curriculum Development. 2021- 2022.
- Member of the Policy and Accreditation Committee in a Pre-Service Teacher Training Program, Ministry of Education, Ministry of Higher Education and Scientific Research, Queen Rania Teacher Academy. Funded by USAID, 2021- Present
- Member of the Board of Trustees of Gernata College - Junior College - Jordan 2020-Present.
- Member and Reporter of the National Committee for the Inclusion of E-Learning in Jordanian Higher Education Institutions- Ministry of Higher Education and Scientific Research - *Higher Education Council* 2020- 2022.
- Member in Higher Education Digital Pedagogies for Inclusive Teaching & Learning Project, “ A Collaborative Project for Designing Faculty Development in the MENA Region”, Funded in part by the Open Society Foundations (OSF), USA,2020 – 2021.
- Member and Rapporteur of the National Committee for the Evaluation of E-Learning in Jordanian Universities - during the Corona Pandemic- Ministry of Higher Education and Scientific Research - *Higher Education Council* 2020.
- Member of Accreditation Committees for a Number of Different Jordanian Universities in Computer Science, Software Engineering and Data Science majors. 2019 -2021.
- Member and Secretary of the Committee in charge of Setting the Strategies of the National Center for Open Learning Resources - Ministry of Higher Education and Scientific Research 2020.
- Member of the National Steering Committee of Jordan Research Center of Excellence for Artificial Intelligence - Research Alliance (JoREAL), “Accelerating Economic Growth through Artificial Intelligence”. 2019 - 2020.

- Member of the National Committee to Set Standards and Instructions for E-Learning and Blended Learning in Jordanian Universities .Accreditation and Quality Assurance Commission for Higher Education Institutions 2020.
- Member of the Technical Committee for Evaluating the works, ideas and short creative videos presented to the National Competition for Universities and Colleges of Jordan - Royal Hashemite Court. 2019 – 2020.
- Member of the Higher Steering Committee for Volunteering - Crown Prince Foundation. 2019-2020.
- Chair of the Researches Study committee provided by the staff of the Ministry of Higher Education and Scientific Research 2019 - 2020.
- Member of several accreditation committees for computer science, software engineering and data science majors in Jordanian Universities. Accreditation and Quality Assurance Commission for Higher Education Institutions 2018 -2021.
- Member of the committees for accreditation of Computer Science and Software Engineering majors Accreditation and Quality Assurance Commission for Higher Education Institutions and 2018 – 2021.
- Member of the Higher National Committee for National Qualifications Framework (NQF)-Vocational - Jordan. 2019-2020. Accreditation and Quality Assurance Commission for Higher Education Institutions.
- Member of the National Education Team. 2030-Jordan- Ministry of Education.
- Member, Jordanian University Ranking System Committee HEAC, Amman, Jordan, 2018- Present.
- Member of the Higher Steering Committee of the National Festival of Electrical and Electronics Engineers Complex in Jordan (IEEE 2019 - 2020).
- Member of the Committee - Award of His Highness the Crown Prince for the Best Application of Government Services – Jordan, 2019 -2022.
- Member in the National Center for Curriculum Development – Computer Science Subject New Curriculum Development – (Kg1 to 12 grade). 2019-2020.
- Member of the Jordanian Higher National Committee for Empowerment and Employment– Ministry of Labor 2018.
- Member of the National Committee for the Development of Infrastructure and Technological Innovation in Jordanian Higher Education Institution 2018 - 2025.
- Chairman of the Jordanian Universities Connected Learning Program in Higher Education Institutions, Jordan, 2018 - 2022.
- Member of Pre - Service Teaching & Education Higher Committee in Jordan (PRESTIJ) – USAID Planned Project Design 2018 - 2019.
- Member of Science and Technology Ethics Charter Committee in the Arab Region – The United Nations Educational, Scientific and Cultural Organization (UNESCO) – 2018 - 2019.
- Member of the National Committee for Education, Culture and Science. Sustainable Development -4<sup>th</sup> Goal (SDG) - 2030.
- Chairman of the General Supervision Committee on the programs and systems of the Ministry of Higher Education and Scientific Research 2018 - 2019.
- Member of the Supreme Committee of Planning, Coordination and Follow – up at Ministry of Higher Education and Scientific Research. 2018 - 2019.

- Acting as External Examiner for the Department of Software Engineering- Accreditation, Jordan University of Science and Technology (JUST). 2018 - 2019.
- Member of the Supreme Committee to ensure the quality of academic programs at Jadara University 2016-2018.
- Member of Jordan University Competences Exam –Kafaah, 2015 - 2018.
- The chair of the Examination Level Committee at Jadara University – Jordan, 2015 – 2018.
- The liaison officer between Jadara University and the Higher Council for Science and Technology, 2015 – 2018.
- Supervisor for Jadara University Official Website, 2015 - 2018.
- Member of Jadara University Council, 2013 – 2018.
- Supervisor and Coordinator for Graduation Project/ Department of software Engineering/Jadara University, 2013 – 2017.
- Member of Organizing Committee of New Trends in Information Technology Conference. (NTIT)-2017-2018.
- Co-Supervisor for MS student – Department of Computer Science (JUST), 2016-2017.
- Acting as external examiner for MS students at The University of Jordan, Yarmouk University, and Jordan University of Science and Technology (2014-2018).
- Graduate Student Senator Kent State University/Computer Science Department, 2011 – 2013.
- Member of the General Committee to repair the certification exam in the medium-Al-Balqa Applied University, Jordan, 2007-2009.
- Member of exams committee of several computer science courses at Al-Balqa Applied University, Department of Computer Science, 2007– 2009.
- Member of exams committee of several computer science courses at Jordan University of Science and Technology, Department of Computer Information System, 2006 – 2008.

### Workshops and Meetings

- Keynote speaker, **Seventh International Conference on Adult Education, Adult learning and education for sustainable development**, 15 to 17 June 2022, Marrakech, Kingdom of Morocco.
- Keynote speaker, **Applied University Teaching International Conference**, “Development of Online Learning in Jordanian Higher Education Institutions: Challenges, Opportunities, and Achievements”. German Jordanian University. 13<sup>th</sup> June 2022. Amman, Jordan.
- Keynote speaker, **World Higher Education Conference 2022 (WHEC)**, Convened by UNESCO and UNHCR, 18<sup>th</sup> to 20<sup>th</sup> of May 2022, Barcelona, Spain.
- **Quality of Teaching and Learning In Jordan**, Preservice Teacher Education Pathways Workshop, USAID, Four Season Hotel, Amman, 15 -16 March 2022.

- **International Best Practice in the Implementation of National Qualification Frameworks (NQF).** 15th December 2021, **British Council &** Accreditation and Quality Assurance Commission for Higher Education Institutions **AQACHEI**.
- Keynote speaker, and Team Leader, **Instructional Design for E-Learning Workshop.** A collaboration between the Ministry of Higher Education and Scientific Research, the Connected Learning in Crisis Consortium, and UNHCR , Dead Sea, Date: 6th-9th December 2021
- **MENA –Education – Entrepreneurship Employability: The Critical Role of Innovation in Higher Education inn Closing Skills Gap in the MENA Region.** Global Online Learning Alliance (**GOLA**) – Online Meeting -UK. 1- Dec 2021.
- **Computer Science Sector Sub-Descriptors & RPL Principles and Portfolio** – (2) Workshops - Higher Education Accreditation and Quality Assurance Commission Aug 29 -2021 – Sept 9 -2021. Movenpick Hotel -Amman.
- **MENA – Trusted Online and Blended Learning: Robust Policy, Quality Pedagogy and Digital Skills.** Global Online Learning Alliance (**GOLA**) - Online Meeting- UK. 25- August 2021.
- **Policy and Decision Making – High Level Course** - Institute of Public Administration - Amman . July 7 2021.
- Keynote speaker, British Council, **Capacity Building: Digital Experiential Teaching and Learning Launch Event** – August 17, 2021.
- Keynote Speaker, UNESCO, Paris. Conference: **“Dissemination Event of UNESCO’s Survey COVID-19: Reopening and Reimagining Universities”**, Wednesday, 30 of June 2021.
- Keynote Speaker, **Erasmus+ CBHE**, Final Dissemination Conference, **“Accreditation of Engineering Study Programs”**: **MEDACCR Project**, Hosted by ENSIT, Tunis, 23 -24 June 2021.
- British Council Webinar **“Refugee Learning Ecosystems: Reimagining Higher Education Access for Refugees”** on Tuesday 22 June 2021 time.
- UNESCO World Conference on **Education for Sustainable Development (ESD)**, Wednesday Feb 3<sup>rd</sup> 2021. New global framework 2020 -2030.
- Expert Speaker, Al Hussein Technical University, an initiative of the Crown Prince Foundation, **Strategic Road mapping Workshop Titled “HTU’s Strategy for Online Teaching and Learning”**, **Jordan- Amman, Al Hussain Business Park, January 7th, 2021.**
- A Country Team Subject Expert in our MENA Region **Digital Pedagogies Project** funded OSF, USA 2020, 5 workshops.
- **National Qualifications Framework** Workshops in the Accreditation and Quality Assurance Commission for Higher Education Institutions 2020.
- Setting the strategies of the **National Center for Open Learning Resources**, (MOHESR), 2020.
- Setting Standards and Instructions for **E-Learning and Blended Learning** in Jordanian Universities . Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI) 2020.

- Helping Universities Staff and faculty members in dealing with **Online Learning**, 2020.
- How to build a **Successful online teaching environment** - Georgetown University 2020.
- Course Building Workshop: **Instructional Design for Connected Higher Education** in Jordan– USA - New York – Harrisville, September 2019.
- The launch of the **Crown Prince Award for Best Mobile Application for Government Services** under the patronage and presence of His Royal Highness Prince Al Hussein Bin Abdullah II, 2019, Amman, Jordan.
- **E - Learning in Jordan Academic Institutions** –challenges and opportunities. Royal Hotel, Jordan 12 – 2019.
- ERASMUS+ Jordan - **Programme Countries Erasmus+ Networking Seminar**, at Crowne Plaza Hotel- Dead Sea, Oct - 2019.
- The Second Workshop of **Connected Learning in Higher Education Institutions**, France- Paris, April 2019.
- The **Jordanian National Consultative Meeting** on the Charter of the **Ethics of Science and Technology** in the Arab Region, Royal Scientific Society and UNESCO. December 2018, Amman, Jordan.
- The First Workshop of **Connected Learning in Higher Education Institutions**, Jordan, Dead Sea Dec 2018.
- The eighth International **Platform on Integrating Arab e-Infrastructure in a Global Environment**, ASREN. Amman-2-3-Dec 2018.
- **Pre Service Teaching & Education** in Jordan – Ministry of Education- Jordan Nov- 2018.
- **Open Resource Education**. EDRAAK – Amman – 2018.
- **Towards Developing MOOCs for Open Education Resources** – Ministry of Higher Education and Scientific Research (MOHE) – 2018.
- **Next Generation of Security Systems** - Ruckus – Bulgaria, Varna, 2018.
- Kafaah Exam, **Accreditation and Quality Assurance Commission for Higher Education Institution**. 2016, 2017.
- **Next Generation of Sophos Anti-Viruses** – Turkey, 2017.
- **Microsoft Imagine Cup Workshop**: Jordan University of Science and Technology.2014.
- **Microsoft –Pioneer Workshop**: Applied Science University – Amman.2014.
- **SAP Graduate Training Program**, Jordan – Youth Development Program Meeting: Petra University – Amman.2014.
- **Software Development Methodology Workshop**: JITS Company – Amman.2014.
- **Ethical Hacking Workshop**: Jadara University.2014.
- **E- Learning Workshop**– Concepts and Methods. Jadara University -2017.

- " **A TraceLab-Based Solution for Identifying Traceability Links using LSI** " at the ACM International Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE'13), San Francisco, California, May 19, 2013.

### Funded Projects

- **A human Resource Indicator Based System In Jordan.** National Human Resources and Informatics Development Committee - the Higher Council for Science and Technology – 100,000 JD, Scientific Research and Innovation Support Fund, MOHESR -2022- 2024.
- **Instructional Design for E-Learning Workshop.** Ministry of Higher Education and Scientific Research, the Connected Learning in Crisis Consortium, and UNHCR. 2021.
- **Instructional Design for Connected Higher Education** in Jordan– USA - New York – Harrisville, 2019. Funded by UNHCR.
- **MEDACCR, On-line Quality Assurance (QA) System and an Accreditation System of Engineering Study Programmes (ESPs) in MENA Area,** consistent with the EUR-ACE Framework Standards and Guidelines (EAFSG), Funded by Erasmus+ programme.

### Research Interests

- Software Maintenance and Evolution
- Information Retrieval for Software Engineering
- Natural Language Analysis in Software Engineering
- Mining Software Repositories
- Big Data Analysis
- Machine Learning
- Online Learning Development
- Blended Learning Development

### Conferences Reviewer

- IEEE International Conference on Software Engineering (ICSE, 2011- Still)
- IEEE International Conference on Software Maintenance (ICSM, 2011- Still)
- IEEE International Conference on Program Comprehension (ICPC, 2011- Still)
- IEEE Working Conference on Reverse Engineering (WCRE, 2011- Still)
- ACM Workshop on Mining Software Repositories (MSR - Still)
- Springer - Empirical Software Engineering (2012 - Still)
- Journal of Software Engineering and Applications (2013 - Still)
- Computer and Information Science ([www.ccsenet.org/cis](http://www.ccsenet.org/cis)), Canadian Center of Science and Education (2014 - Still).

## Research Activities

- Research Member at Software Development Laboratory <**SDML**>, Kent State University, Ohio, USA, [www.sdml.info](http://www.sdml.info). The research program focuses on the construction of methods, tools, and environments to assist in the process of software evolution and maintenance of large-scale systems. Current investigation includes:
  1. Textual Analysis in Software Engineering - The research focuses on investigating the combined use of textual and static information of programs to support the comprehension tasks (Feature/Concept Location) involved in the maintenance and reengineering of software systems. Advanced information retrieval (IR) and natural language processing (NLP) methods, such as latent semantic indexing (LSI), are used for textual analysis of software artifacts.
  2. Demonstrates the use of problem and solution domain knowledge and word meaning in augmenting user queries for feature/concept location.
  3. Studying the effects of eliminating certain textual information (e.g., comments and function calls) from being included when performing source code indexing for feature/concept location.
  4. Adaptive Maintenance Analysis: The development of a large benchmark data set of adaptive maintenance changes. The data provides a point of reference for the study of these types of changes. Developed an automated approach, centered on the LSI, to identify adaptive maintenance changes for existing systems.
  5. Software Traceability: a means to uncover a set of traceability links, between source code files and other artifacts, resulting from mining repository commits.
  6. Program Slicing Development: The development of highly efficient lightweight forward static slicing approaches. The developed approaches are based on the XML representation of source code.
- Research member at the Software Traceability Development Laboratory (**TraceLab**), USA, <http://www.coest.org> :
  1. Trace-Lab Solution Development: employ TraceLab to be used in supporting software engineering researches, including classifying change commits, and predicting future maintenance activities. This research is supported in part by grants from the National Science Foundation NSF grant CCF 08-11-21 and CNS 09-59924.

## Teaching Interests

- Software Engineering
- Information Retrieval
- Data structures
- C++, Java, Visual Basic
- Machine Learning
- Data Science
- Operating System
- Algorithms
- Introductory programming
- Information System Projects Management

## Teaching Philosophy

My experiences as an instructor have helped me a lot to make good understanding of how people learn, which one of the significant aspects of teaching is. It was an interesting experience when I was trying to explain how software helps people in real life. The key of success is to relate to the audience by starting from what they know and building upon it.

In classroom, my main goal is to encourage independent thinking and analytical reasoning to augment their problem solving skills, thus encouraging them to not just memorize. This prompts classroom discussions, which are very useful and led to several intellectually stimulating questions/arguments, which are not easy to answer. A teacher should be totally involved with the class, dedicated to his/her students and be prepared to devote time and energy for them. Love for teaching evokes passion, and dedication.

My teaching philosophy based in three main points. Constantly encourage my students to discuss and develop their capabilities; to use education research to support my improvement efforts; and a teacher is that of a leader where you have to show the path, motivate, encourage, and lead by example.

## Work Philosophy

- Participation in the planning, organization and general policy formulation processes in the ministry with the aim of achieving the ministry's strategy.
- Preparing the e-transformation plan, supervising its implementation, and developing e-services in the ministry, in a way that contributes to achieving the objectives of the e-government program.
- Contributing and participating in preparing the strategies of government agencies, supervising them and following up on their implementation.
- Communicate with government agencies and Jordanian universities and provide them with the necessary support to enable them to make maximum use of common services.
- Participating and supervising the development and preparation of educational content for training academic cadres in Jordanian universities on how to prepare and prepare university courses electronically.
- Representing the Ministry in many local and international conferences and seminars.
- Coordinating proposals for the necessary funding to implement projects and programs related to electronic transformation through negotiations and discussions with many donors and international organizations.

## Publications - Conferences & Journals

1. T. Assaraira; **N Alhindawi**; Z. Al-Anber; S. Bani-Mohammad; Z. Albashaireh. "The Jordanian Universities Experience in Integrating Online Learning and its Quality Assurance". The International Arab Journal of Information Technology, Vol. 19, No. 3A, Special Issue 2022.
2. **N. Alhindawi**, O. Meqdadi, J. Alsakran , N. Aljawarneh and H. Migdadi."Understanding and predicting bugs fixed by API-migrations". International Journal of Data and Network Science, Vol 6, 849–860, 2022.

3. Jamal Alsakran<sup>1</sup>, Loai Alnemer , **Nouh Alhindawi**, and Omayya Muard." Detecting COVID-19 in X-ray Images using Transfer Learning,". Information Sciences Letters Journal. Inf. Sci. Lett. 11, No. 5, pp - 1823-1829. (2022).
4. T. Assaraira *et al.*,,,,,, **N. Alhindawi** "A Study on the Implementation of Integrating Online Learning (Fully and Blended Forms) and its Quality Assurance in Jordanian Universities," *2021 22nd International Arab Conference on Information Technology (ACIT)*, 2022.
5. K. Nahar, F. Al-Omari, **N. Alhindawi**, M. Banikhalaf. "Sounds Recognition in the Battlefield Using Convolutional Neural Network". International Journal of Computing and Digital Systems, 2022.
6. **N. Alhindawi**, M. AL Zamil, J. Alsakran, O. Muard, A. Alzyoud, "Node-Replication Attack Detection in Vehicular Ad-hoc Networks based on Automatic Approach". Information Sciences Letters Journal, Vol. 11, No. 03, PP: 863-867. 2022.
7. N. Aljawarneh, M. Taamneh, **N Alhindawi**, K Alomari, F. Masad. "Fog computing-based logistic supply chain management and organizational agility: The mediating role of user satisfaction". Journal of Uncertain Supply Chain Management. 2021.
8. F. Abdullah, M. Al-Ayyoub, I. Hmeidi, **N. Alhindawi**. "A deep learning approach to classify and quantify the multiple emotions of Arabic tweets", 12th International Conference on Information and Communication Systems. 2021.
9. O. Al-Hazaimeh, M. Al-Jamal, M. Bawaneh, **N. Alhindawi**, B. Hamdoni. "A New Image Encryption Scheme Using Dual Chaotic Map Synchronization". INTERNATIONAL ARAB JOURNAL OF INFORMATION TECHNOLOGY, 18(1), 95-102. 2021.
10. A. Shawabkeh , H. Faris , I. Aljarah ,B. Salih · D. Alboaneen, **N. Alhindawi**. "An Evolutionary-based Random Weight Networks with Taguchi Method for Arabic Web Pages Classification". Arabian Journal for Science and Engineering, Springer 2021.
11. R. Malkawi, A. Saifan, **N. Alhindawi**, A. Ismaeel. "Data Mining Tools Evaluation Based on Their Quality Attributes". International Journal of Advanced Science and Technology 29 (3), 13867 -90. 2020.
12. S. Alzu'bi, O. Badarneh, B. Hawashin, M. Al-Ayyoub, **N. Alhindawi** and Y. Jararweh, "Multi-Label Emotion Classification for Arabic Tweets," 2019 Sixth International Conference on Social Networks Analysis, Management and Security (SNAMS), Granada, Spain, pp. 499-504, 2019.
13. **Alhindawi, N. T.**, Abu Ata, B., Obeidat, L. M., Al-Batah, M. S., & Abu-Ata, M. "A Topic Modeling Based Approach for Enhancing Corpus Querying". International Journal of Open Source Software and Processes (IJOSSP), 10(3), 38-50, 2019.
14. O Meqdadi, **N Alhindawi**, J Alsakran, A Saifan, H Migdadi," Mining Software Repositories for Adaptive Change Commits Using Classification Learning". Information and Software Technology (IST), 2019.
15. M Subhi Al-Batah, **N Alhindawi**, "Source Code Explorer System to Enhance the Software Maintainability and Scalability". NAUN International Journal of Education and Information Technologies, (IJCSIS), 2019.

16. M Akour, N **Alhindawi**, L Abu-Wardih and Auryibah Al.Shboul. "Test Case Minimization using Genetic Algorithm: Pilot Study". The 8<sup>th</sup> International Conference on Computer Science and Information Technology (CSIT 2018). Amman- Jordan, 2018.
17. K Nahar, N **Alhindawi**, OM. Al-hazaimah, R M. Al- Khatib, A M Al-Akhras." NLP AND IR BASED SOLUTION FOR CONFIRMING CLASSIFICATION OF RESEARCH PAPERS". Journal of Theoretical and Applied Technology, (JATIT), 2018.
18. O Badarneh, M Al-Ayyoub, N **Alhindawi**, Y Jararweh "Fine-Grained Emotion Analysis of Arabic Tweets: A Multi-Target Multi-Label Approach". The 12<sup>th</sup> IEEE International Conference on Semantic Computing (ICSC). California, USA, Jan 31 - Feb 2018.
19. N **Alhindawi**," Information Retrieval - Based Solution for Software Requirements Classification and Mapping". 5th International Conference on Mathematics and Computers in Sciences and Industry Corfu Island, Greece August 25-27, 2018.
20. N **Alhindawi**, Z Saraireh, O Meqdadi, OM M. Al-Hazaimah, Mohammad Al-Batah, "Revising Program's Internal Documentation for Developers Sustaining". Journal of Theoretical and Applied Technology, (JATIT), 2017.
21. N **Alhindawi**, M Al-Batah, R Malkawi, A Al Zuraiqi," Hybrid technique for complexity analysis for java code". International Journal of Advanced Computer Science and Applications (IJACSA), 8(3). (2017).
22. OM Al-Hazaimah, M Al-Jamal, N **Alhindawi**, Abedalkareem Omari, "Image encryption algorithm based on Lorenz chaotic map with dynamic secret keys" in Neural Computing and Application. (NCAA). Springer 2017.
23. H Alsawalqah, H Faris, I Aljarah, N **Alhindawi**, and L Alnemer," Hybrid SMOTE-Ensemble Approach for Software Defect Prediction". Book Title: "Advances in Intelligent Systems and Computing". Springer 2017. (Book chapter).
24. J Alsakran, N **Alhindawi**, L Alnemer." Parallel Coordinates Metrics for Classification Visualization". International Conference on Information and Communication Systems (ICICS 2016). Jordan. April. 2016.
25. N **Alhindawi**, OM Al-Hazaimah, R Malkawi, J Alsakran. "A Topic Modeling Based Solution for Confirming Software Documentation Quality" International Journal of Advanced Computer Science and Applications (IJACSA), 7(2). 2016.
26. OM Al-Hazaimah, N **Alhindawi**, N Otoum. "A Novel Video Encryption Algorithm-Based On Speaker Voice as the Public Key". IEEE - 2014 International Conference on Control Science and Systems Engineering (CCSSE 2014). USA & China. 2014.
27. J Alsakran, A Rodan, N **Alhindawi**, H Faris. "Visualization Analysis of Feed Forward Neural Network Input Contribution". Scientific Research and Essays 9 (14), 645-651.Nigeria. 2014.
28. OM Al-Hazaimah, N **Alhindawi**, SMA Hayajneh, A Almomani." HANON Chaotic Map - Based New Digital Image Encryption Algorithm". MAGNT Research Report 2 (4), 261-266. 2014.

29. A Ma'moun, OM Al-hazaimeh, N **Alhindawi**, SMA Hayajneh." A Dual Curvature Shell Phased Array Simulation for Delivery of High Intensity Focused Ultrasound". Computer and Information Science 7 (3), p49, 2014. Canada. 2014.
30. Al-hazaimeh, O., Alomari, S., Alsakran, J. and **Alhindawi**, N. (2014). Across Correlation - New Based Technique for Speaker Recognition. International Journal of Academic Research Part A; 6(3), 232-239. 2014.
31. **Alhindawi**, N., Alsakran, J., Rodan, A. and Faris, H. (2014). A Survey of Concepts Location Enhancement for Program Comprehension and Maintenance. Journal of Software Engineering and Applications, 7, 413-421. 2014.
32. Alomari, H.W., Collard, M.L., Maletic, J. I., **Alhindawi**, N., Meqdadi, O., "srcSlice: Very Efficient and Scalable Forward Static Slicing", *Journal of Software: Evolution and Process*, DOI: 10.1002/smr.1651, pp. (31 pages). (Special Issue on the Best Papers from WCRE. 2012.
33. Meqdadi, O., **Alhindawi**, N., Collard, M.L., Maletic, J., " Understanding Large-Scale Adaptive Changes from Version Histories: A Case Study ". 29<sup>th</sup> IEEE International Conference on Software Maintenance (ICSM ERA'13), Eindhoven, the Netherlands.2013.
34. **Alhindawi**, N., N. Dragan, et al. (2013). Improving Feature Location by Enhancing Source Code with Stereotypes. 29<sup>th</sup> IEEE International Conference on Software Maintenance (ICSM), Eindhoven, the Netherlands.2013.
35. **Alhindawi**, N., Meqdadi, O., Bartman, B., Maletic, J.I., " A TraceLab-Based Solution for Identifying Traceability Links using LSI " in Proceedings of the ACM International Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE'13), San Francisco, California, May 19, 2013.

## References

- Mohammad Abu Qudais, Full Professor at Jordan University of Science & Technology- Was- Minister of Higher Education and Scientific Research in Jordan. E- Mail: [qudais@just.edu.jo](mailto:qudais@just.edu.jo).
- Ahed Al-Wahadni, Full Professor at Jordan University of Science & Technology. Faculty of Dentistry. Was - Secretary General, Ministry of Higher Education and Scientific Research (MOHE. Email: [ahed@just.edu.jo](mailto:ahed@just.edu.jo).
- Jonathan I. Maletic , Full Professor of Computer Science, Computer Science Department, Kent State University, Kent OH 44242, E-mail: [jmaletic@kent.edu](mailto:jmaletic@kent.edu) Home page: <http://www.cs.kent.edu/~jmaletic/>.
- Feodor F. Dragan, Full Professor of Computer Science, Computer Science Department, Kent State University, Kent OH 44242, E-mail: [dragan@cs.kent.edu](mailto:dragan@cs.kent.edu) Home page: <http://www.cs.kent.edu/~dragan/>.