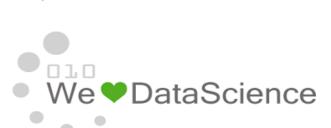# Sulieman Bani-Ahmad

Professor, Computing and Information Sciences
Department of Intelligent Systems (Data science branch),
Faculty of Artificial Intelligence, Al-Balqa Applied University

sulieman@bau.edu.jo
http://sulieman.net

Last updated on *Sunday, September 25, 2022.*

We ♥ DataScience

" شروق الشمس مسألة وقت، لكن استيقاظك من النوم مسألة وعي!"

"Teachers have three loves: love of learning, love of learners, and the love of bringing the first two loves together."

— Scott Hayden

1. Mail Address and Contact information

Sulieman Ahmad Bani-Ahmad, Professor
Department of Intelligent Systems
Faculty of Artificial Intelligence (Level B2)
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Salt, Jordan
Mobile #: +962 775162468
Email:
- sulieman@bau.edu.jo
- sulieman@case.edu
- Sulieman.ahmad@gmail.com

URL:
- sulieman.net
- Webpage @ BAU: https://www.bau.edu.jo/UserPortal/UserProfile/Wall.aspx?userid=72501
- *Google scholar profile:* https://scholar.google.com/citations?user=-aTxbckAAAAJ&hl=en&oi=ao

This CV:
- sulieman.net/cv

2. Personal websites and YouTube channel

- *Personal website:* http://Sulieman.net
- *Personal page @ BAU:* https://www.bau.edu.jo/UserPortal/UserProfile/Wall.aspx?userid=72501
- *Webpage @ Google Sites:* sulieman.net/i
- *YouTube channel:* http://sulieman.net/y

3. Professional related web-links and websites

- *My Courses' website:* http://sulieman.net/c
- *Google scholar profile:* https://scholar.google.com/citations?user=-aTxbckAAAAJ&hl=en&oi=ao
- *ResearchGate profile:* https://www.researchgate.net/profile/Sulieman_Bani-Ahmad
- *Live DNA profile:* http://www.livedna.net/?dna=962.618
- *SCOPUS Author ID:* 23395732000; https://www.scopus.com/authid/detail.url?authorId=23395732000
- *Thomson Reuters Researcher ID:* D-5931-2015, http://www.researcherid.com/rid/D-5931-2015
- *ORCID:* http://orcid.org/0000-0003-4064-9405
- **Key skills for distance learning – For instructors**: https://sulieman.net/skills

4. Project X (Chi)

- **Project X [X-Pro Milestone, X-Swift, X-Diff, X-Acc]**: http://Sulieman.net/xpro
- *Project X software packages (download links):*
  - X-Pro Milestone, X-Swift, X-Diff, X-Acc, and X-Rhythm

5. Academic Preparation

Ph.D. August 2003 – May 2008, **Case Western Reserve University**, Cleveland, Ohio, USA
PhD. in Computing and Information Science.
Electrical Engineering and Computer Science (EECS) department. Case School of Engineering.
Adviser's name: *Gultekin Özsoyoglu*. Ph.D. from the University of Alberta – Alberta, Canada.
Thesis title: *Research-Pyramid Based Search Tools for Online Digital Libraries*.

M.Sc. September 1999 – June 2002, **Al al-Bayt University**, Mafraq, Jordan
M.Sc. Computer Science – Parallel Computing.
Computer Science Department. Faculty of Information Technology.
Adviser's name: *Ismael Ababneh*. Ph.D. from Iowa State University. Iowa, USA.
Thesis title: *Experimental Study on Time and Space Sharing on the PowerXplorer*.

B.Sc. September 1994 – June 1999, **Jordan University of Science and Technology**, Irbid, Jordan
B.Sc. Electrical/Computer engineering – Major in Computer Engineering.
Electrical Engineering Department. Faculty of Engineering.
Graduation project supervisor: *Taisir Eldos*, Ph.D. from University of Alabama in Huntsville. Alabama, USA
Graduation project title: *Motorola MC68000 Simulator and Emulator using Visual Basic 5*.

6. Work Experience

October 1 - Now **Vice dean**	**Faculty of Artificial Intelligence**– Al-Balqa Applied University, Al-Salt Campus, Jordan **Vice dean.**
October 1 - Now **Department Chair**	**Faculty of Artificial Intelligence**– Al-Balqa Applied University, Al-Salt Campus, Jordan **Department Chair – Department of Intelligent Systems.**
June/July 2022 **Department Chair**	Department of Intelligent Systems, **Faculty of Artificial Intelligence**– Al-Balqa Applied University, Al-Salt Campus, Jordan **Dept. chair while the HOD in a one-week vacation**. Department of Autonomous Systems, **Faculty of Artificial Intelligence**– Al-Balqa Applied University, Al-Salt Campus, Jordan **Dept. chair while the HOD in a three-week vacation**.
September 2019 **– Now** **Professor**	Department of Intelligent Systems, **Faculty of Artificial Intelligence (data science branch)** – Al-Balqa Applied University, Al-Salt Campus, Jordan **Professor**.
September 2018 **– September 2019** **Professor**	Department of Computer Information Systems, **Faculty of Information Technology** – Al-Balqa Applied University, Al-Salt Campus, Jordan **Professor**.
June 2017 **– September 2018** **Professor**	Department of Computer Sciences, **Faculty of Computers and Information Technology** – University of Tabuk – Main Campus, Tabuk, Saudi Arabia **Professor**. **Measurement and Evaluation Unit** (MEU), University of Tabuk – Main Campus, Tabuk, Saudi Arabia **IT Consultant and Trainer**
June 2017 **– September 2018** **Professor** (in unpaid leave)	Department of Computer Information Systems, **School of Information Technology** – Al-Balqa Applied University, Al-Salt Campus, Jordan **Professor**.
June 2016 **– June 2017** **Associate Professor, IT Consultant, Trainer.** (sabbatical leave)	Department of Computer Sciences, **Faculty of Computers and Information Technology** – University of Tabuk – Main Campus, Tabuk, Saudi Arabia **Associate Professor**. **Measurement and Evaluation Unit** (MEU), University of Tabuk – Main Campus, Tabuk, Saudi Arabia **IT Consultant and Trainer** **Faculty of Higher Education**, University of Tabuk – Main Campus, Tabuk, Saudi Arabia **Dean's Consultant.**
June 2011 **– June 2016** **Associate Professor**	Department of Computer Information Systems, **School of Information Technology** – Al-Balqa Applied University, Al-Salt Campus, Jordan **Associate Professor**.
September 2012 **– September 2013** *Assistant Dean*	**School of Information Technology** – Al-Balqa Applied University, Al-Salt Campus, Jordan **Assistant Dean for Planning, Development, and Quality Assurance**.

September 2011 – August 2012 Department Chair	Department of Computer Information Systems, **School of Information Technology** – <u>Al-Balqa Applied University</u>, Al-Salt Campus, Jordan **Department Chair**.
September 2011 – May 2012 Assistant Professor	Department of Computer Information Systems, **School of Information Technology** – <u>Al-Balqa Applied University</u>, Al-Salt Campus, Jordan **Assistant Professor**.
June 2008 – August 2011 Assistant Professor	Information Technology Department, **School of Science and Information Technology** – <u>Al-Balqa Applied University</u>, Al-Salt Campus, Jordan **Assistant Professor**.
October 2007 – April 2008 Web Developer	<u>Electrical engineering and Computer Science Department</u>, **School of Engineering** - Case Western Reserve University, Cleveland Ohio, USA **Web Developer**.
October 2007 – May 2008 Web Developer and IT Consultant	Endodontics Department, **Dental School** - Case Western Reserve University, Cleveland Ohio, USA **Web Developer and IT Consultant**.
September 2007 – February 2008 Web developer and IT consultant	*Historians of British Art Center* and *Baker-Nord Center for Humanities* – Case Western Reserve University, Cleveland, Ohio, USA **Web developer and IT consultant**.
August 2006 – October 2007 IT Consultant and Web Administrator	<u>USA Income Tax Professionals Inc</u> **(formerly A & R Tax and Accounting Services)**, Cleveland, Ohio, USA *IT Consultant and Web Administrator (voluntary)*.
August 2003 – December 2005 Grader	<u>Electrical engineering and Computer Science Department</u>, **School of Engineering, Case Western Reserve University**, Cleveland, Ohio, USA *Grader* for the following undergraduate courses: *Introduction to Database systems* and *Introduction to Data Structures.*
August 2004 – December 2004 Computer Technician	**Law School help desk at Case Western Reserve University**, Cleveland, Ohio, USA *Computer Technician*.
August 2003 – May 2008 Research Assistant	<u>Electrical Engineering and Computer Science Department</u>, **Case Western Reserve University**, Cleveland, Ohio, USA *Research Assistant*.
September 2002 - September 2003 Full-time Instructor	**Al al-Bayt University.** <u>Faculty of Information Technology</u>, Mafraq, Jordan *Full-time Instructor*.
March 2002 – September 2002 Computer Trainer	<u>Greater Irbid Municipality</u>, Irbid- Jordan *Computer Trainer*.
August 2000 – December 2000 Part-time Teacher Assistant	**Al al-Bayt University/** <u>IT college</u>, Mafraq, Jordan *Part-time Teacher Assistant*.

| September 1999
- September 2000
Lab Technician and Grader | **JUST University/Computer Engineering Department**, Irbid, Jordan
Lab Technician and Grader. |

| February 2000
- June 2002
Lab Technician | Yarmouk University, **Hijjawi faculty for Engineering Technology**,
Computer Engineering Department, Irbid, Jordan.
Lab Technician. |

7. Teaching Experience – Taught Courses

Al-Balqa Applied University

Bachelor level (Faculty of Artificial Intelligence, Al-Balqa Applied University, Main Campus, Al-Salt-Jordan)

- AR241 - Artificial Intelligence Programming
- AR211 - Data Structures
- DS111 - Data Science Fundamentals
- DS233 - Probability and Statistics for Data Scientists Lab (using Python).
- DS233 - Probability and Statistics for Data Scientists Lab (using R).
- ICS 242 Scripting Programming
- 30809457 - Selected programming language for Information Security (Python)
- DS 480 Big data analytics (KNIME, RapidMiner) and the Hadoop system (HDFS and MapReduce)
- AR 443 Intelligent Text Mining (Python, NLTK, SKLearn)

- DS210 Data Science Programming Languages
- DS212 Data Science Programming Languages Lab.
- DS260 Web Application Development (HTML, CSS, JS, PHP, MySQL)
- DS261 Web Application Development Lab
- DS230 Data Mining (Python, Pandas, SKLearn, Anaconda, Jupyter Notebook)
- DS232 Data Mining Lab.
- VAR202 Data Structures and Algorithms
- DS241 Data Analytics (Python, Pandas, and other libraries)
- DS339 Data Warehousing (Power BI and TableAU)
- DS 415 Database II (Node.JS, MongoDB and Python)*

Bachelor level (Faculty of Information Technology, Al-Balqa Applied University, Main Campus, Al-Salt-Jordan**)**

- Programming in Java
- Computer Skills I (CISCO curriculum)
- Digital society (university elective)
- Digital Logic Design
- Digital Logic Design Lab (taught using EWB (Electronic Work Bench software tool))
- Data Structures I
- Database Management Systems (Database Systems I)
- Information Retrieval Systems
- Web Engineering and Design
- Data Warehousing
- Intelligent Systems (Based on Arduino and Intel Galileo boards)
- Object Oriented Programming (using C#).
- Web Application Development (MySQL PHP, HTML, and JavaScripting)
- Web Application Development lab (MySQL PHP, HTML, and JavaScripting)
- Introduction to Operating systems

- Computer Skills II (programming in C++ using Visual Studio)
- Data Communications and Networking
- Distributed Database Management
- Parallel and Distributed Systems.
- Parallel and Distributed Systems lab.
- Data Structures II. (Using C#)
- Introduction to UNIX Operating System (Ubunto-based course)
- Introduction to UNIX Operating System Lab (Ubunto-based course)
- Introduction to Computer Architecture.
- Communication Skills (for scientific and technical professionals)
- Computer Skills II (programming with Visual Basic)
- Web Computing I – Lab (HTML, Javascript)
- Graduation Project Management

Master level

- ***Advanced Operating Systems*** (many times)*.* Main topics covered are: Process Scheduling in single-CPU computers, Introduction to parallel computing, Process Scheduling and processor allocation in multicomputers, Process synchronization in single-CPU computers, Mutual exclusion in distributed systems. **Where**: At Al-Balqa Applied University, Main Campus, Al-Salt-Jordan.
- ***Advanced Computer Architecture*** (many times). Main topics covered are: Computer Evolution and Performance, Top Level View of Computer Function and Interconnection, Cache memory architecture and performance, Internal and external memory architecture and performance, Computer arithmetic, Instruction sets characteristics, Instruction sets addressing modes, RISC vs CISC machines, Instruction Level Parallelism and Superscalar Processors, Parallel processing, Multicore CPUs. **Where**: At Al-Balqa Applied University, Main Campus, Al-Salt-Jordan.
- **Advanced Computer Networks** (one time). **Where**: At Al-Balqa Applied University, Main Campus, Al-Salt-Jordan.
- **Computer and Information Security** (one time). **Where**: At Al-Balqa Applied University, Main Campus, Al-Salt-Jordan.
- **Advanced Database Systems for MIS students** (one time)**. Where**: At Al-Balqa Applied University, Princess Alia University College, Amman-Jordan.

University of Tabuk – Saudi Arabia (June 2016 – September 2018) (bachelor level)

- Algorithms Analysis and Design
- Multimedia Systems
- Information Technology Essentials
- Data Structures and Algorithms.
- Web and Internet Technologies.
- Computer Ethics.

At Al-Albayt university (September 2001 – August 2003)

Bachelor level courses

- Artificial Intelligence (2 semesters)
- Fourth Generation Languages (Oracle DBMS and PL/SQL) (2 semesters)
- Object Oriented Programming (in C++) (2 semesters)
- Data Structures and Files (in C++) (2 semesters)

8. Academic Services and Activities

- **E-learning committee**. Faulty of computers and Information Technology, University of Tabuk, Saudi Arabia (academic year 2016/2017).
- **IT consultant and trainer**. Measurement & Evaluation Center, University of Tabuk, Saudi Arabia (academic year 2016/2017).
- **Academic advisor** for the **IT Development Club** of Al-Balqa Applied University (academic years 2011/2012 and 2012/2013).
- **Academic advisor** for the **.Net Club** of Al-Balqa Applied University (academic years 2011/2012 and 2012/2013).
- ***Committee member –*** *Graduate Studies and the Scientific Research committees* for the school of Information Technology. The academic year 2011/2012.
- ***Assistant dean for quality assurance.*** Faculty of Information Technology. The academic year 2012/2013.
- ***Department chair*** for the Computer Information Systems department. The academic year 2011/2012.
- ***University Council member*** for the year 2010/2011**:** *Representative* of the Faculty of Science and Information Technology in the university council for the academic year 2010/2011.
- ***Master comprehensive exam committee member*** – Department of Information Technology (since June 2008 – now).
- ***Curriculum committee member*** – Department of Information Technology (Years 2009/2010, 2010/2011).
- ***Graduate program committee coordinator***.
- ***Course coordinator*** of multiple undergraduate courses. Examples are: *Computer Skills I* and *Introduction to computer architecture*.

- *Student's advising committee* for the CIS department.

Curriculum and Course Development

- **Software development**: Developed a set of Distance learning software-tools: Check the X-Project for details (down).
- **Distance-learning technical support**: for faculty members at Al-Balqa Applied University (and other Jordanian universities, e.g. Jordan University of Science and Technology and Yarmouk University) during the Coronavirus pandemic.
- **Distance-learning technical training:** trained a number of faculty members at Al-Balqa Applied University (and other Jordanian universities, e.g. Jordan University of Science and Technology) during the Coronavirus pandemic.
- **Designed the following labs** (along with the associated courses) for the Faculty of Artificial Intelligence (2020/2021):
  - Web Application Development lab (taught using HTML, CSS, JavaScript, PHP and MySQL),
  - Probabilities and Statistics lab (taught using R).
  - Probabilities and Statistics lab (taught using Python).
  - Data mining lab (taught using R and Python)
  - Data Science Programming Languages Lab (Advanced programming in R and Python).
  - Artificial Intelligence programming lab (programming in Python)
- **Curriculum Development** for the Data Science bachelor degree program (Faculty of Artificial Intelligence) (year 2018/2019).
- **Curriculum Development** for the CIS department (year 2015/2016): proposed a new **master degree** study plan in **Computer Information Systems** with focus on **big data processing**.
- Curriculum Development for the CIS department (year 2016): proposed a new **bachelor degree** study plan in **Web Technologies and Engineering**.
- Curriculum Development for the CIS department (year 2016): proposed a new bachelor degree study plan in **Computer Information Systems**.
- Designed the "**Digital logic analysis and design**" lab.
- Designed the "**Web Application Development**" lab.
- Curriculum Development for the Information Technology department (year 2011): My role was to make changes to the current study plans of the following (i) the division of Computer Information Systems (CIS), and (ii) the division of Computer Science (CS).
- Designed the "Introduction to UNIX" course and its lab.
- Redesigned the "*Distributed Database Management* systems" course.
- Redesigned the "*Management of Software Projects*" course and its lab.

9. Research and Professional Activities—Summary

Bani-Ahmad's research interests cover topics from Web-computing, data science, Online Literature Digital Libraries, software development (for educational purposes, with focus on tools specially designed for distance learning during the Coronavirus pandemic period), and high performance computing. Bani-Ahmad published in a number of international conferences in multiple international peer-reviewed journals. Bani-Ahmad worked as a peer reviewer and a technical committee member in a number of international conferences and workshops. Bani-Ahmad is A member of IEEE; Jordanian Engineers Association; ACM; IACSE (International Association for Computer Scientists and Engineers), IACSIT (International Association of Computer Science and Information Technology); and IAENG (International Association of Engineers).

Bani-Ahmad has worked as (i) a Lab Technician at the Department of Computer Engineering, Yarmouk University and Jordan University of Science and Technology, both in Irbid, Jordan. (ii) an Instructor at the Faculty of Information Technology, Al al-Bayt University, Mafraq, Jordan. (iii) as a Grader and as a research assistant at the Case Western Reserve University, Cleveland, Ohio, USA. (iv) a Computer Technician, IT Consultant and Web Administrator, and as Web Developer at the Department of Electrical Engineering and Computer Science, Case Western Reserve University, Cleveland, Ohio, USA. Bani-Ahmad is currently working as a professor in the Department of Intelligent Systems at the faculty of Artificial Intelligence - Al-Balqa Applied University, Salt, Jordan.

10. Research Interests

Data science and Web-computing

- Digital Libraries *(Online Literature digital libraries)*.
- Performance and scalability issues of Searching.
- Searching web retrieval systems: Context-based searching. , Vertical search, Score-guided searching. Example-based and keyword-based searching.
- Sentiment analysis and data analytics, Social Network Analysis.
- Domain-specific citation behavior in Citation Networks. Research development models in literature.
- Enhancing user interface of Online Literature Digital Libraries.
- Distance-based and Space-based indexing.

Software development, E-learning, Computer-based and Computer-aided teaching

Check the X-Project listed below for more details. In this project, a set of software tools have been developed with focus on features specially designed for distance learning during the Coronavirus (Covid 19) pandemic period.
- Development of syllabus-specific question-bank software tools.
- Computer-aided exam preparation.
- Computer-based performance-interference detection and prevention.
- Computer-based student evaluation.
- Computer-aided strategies for delivering knowledge.
- Course scores statistical analysis tools.
- Automated tools for converting numeric scores into grades.
- Arabic-language supporting e-learning and e-teaching tools.

High performance computing

- Time and space sharing in multicomputers, processor allocation strategies on multicomputers.
- Issues of distributed computation.
- Design and implementation of parallel programs.
- Comparative evaluation of parallel programming languages.

11. Professional Affiliation

- **IEEE** member since 1996.
- **IEEE GOLD** (Graduates Of the Last Decade) affinity group.
- **Jordanian Engineers Association**. A member since 1999.
- **ACM** student since August 2005.
- **IACSIT** (International Association of Computer Science and Information Technology). Since December, 2010.
- **IAENG** (International Association of Engineers). A member of the following IAENG Societies: Computer Science, Data Mining, Information System Engineering, and Internet Computing and Web Services. Since December 2010.
- **IACSE** (International Association for Computer Scientists and Engineers). Since January 2011.
- **AICIT** (Advanced Institute of Convergence Information Technology). Since March 2011.
- **WASET** (World Academy of Science, Engineering and Technology), a Scientific and Technical Committee & Editorial Review Board.
- International Academy, Research, and Industry Association (IARIA),

12. Professional Services, Consultations and Peer Reviews

Computer Programming contests

- *Steering Committee Member* in the 2012 Arab Collegiate Programming Contest, held at Prince Sumayya University of Technology.

- *Steering Committee Member* in the 2012 Jordanian Collegiate Programming Contest, held at Prince Sumayya University of Technology.

Conference and Workshop Peer Reviewing (sample)

Many, since 2008.

Journal Peer Reviewing (sample)

- Information Technology Journal, http://scialert.net/eboard.php?issn=1812-5638
- Journal of Applied Sciences, http://scialert.net/eboard.php?issn=1812-5654
- Research Journal of Information Technology, http://scialert.net/eboard.php?issn=1815-7432
- Journal of Software Engineering, http://scialert.net/eboard.php?issn=1819-4311
- Journal of Artificial Intelligence, http://scialert.net/eboard.php?issn=1994-5450
- International Journal on Advances in Intelligent Systems. International Academy, Research, and Industry Association (IARIA), https://www.iariajournals.org/
- InderScience International Journal of Embedded Systems, http://www.inderscience.com/ijes
- SERSC International Journal of Digital Contents and Applications (IJDCA).
- Journal of Computational Biology and Bioinformatics Research.
- Journal of Convergence Information Technology. Published by AICIT (Advanced Institute of Convergence Information Technology) - Korea.
- The International Journal of Communication Networks and Distributed Systems (IJCNDS). By Inderscience publishers.
- Jordan ACM Chapter - ISWSA Research Bulletin (ACM IJJ). Jordan.
- The International Arab Journal of Information Technology (IAJIT). Jordan.
- The International Journal of Computer Science and Software Technology (IJCSST).
- The International Association of Engineers (IAENG) International Journal of Computer Science (IJCS) – China.

Book and Journal Issue Editor

- ***Editorial Board member, International Journal of Communication Networks and Information Security (IJCNIS),*** *www.ijcnis.org (ISSN: 2076-0930 (Print), ISSN: 2073-607X (Online))*
- ***Editorial Board Member*** in IARIA International Journal on Advances in Intelligent Systems (issn: 1942-2679).
- **Technical editor** of the following journals (by SciAlert): Information Technology Journal, Journal of Applied Sciences, Research Journal of Information Technology, Journal of Software Engineering, Journal of Artificial Intelligence.
- ***Guest editor and Editorial Board Member***, Journal of Convergence in Information Technology, Special issue on "Muticore and Manycore Computing: Technologies and Applications. 2011.
- ***Editorial Board Member*** in Ubiquitous Computing and Communication Journal (UBiCC). Since January, 2011.
- *Special Issue co-editor*, **Bulletin of the IEEE on Data Engineering**, Vol. 28 No. 4, December 2005. [This was on behalf of my advisor Prof. Gultekin Özsoyoglu].

Conference/Workshop Committee membership

Best Paper Award decision committee

- The International Conference on Information and Communication Systems (ICICS 2011). Irbid, Jordan.

Best Student-Paper Award decision committee

- The International Conference on Information and Communication Systems (ICICS 2011). Irbid, Jordan.

Conference/Workshop Steering Committee membership

- Steering committee member in IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies 2011 (AEECT 2011). December 6-8, 2011.
- Track chair for the "IT Applications and Services" track in AEECT 2011.

Conference/Workshop Session Chairing

- Session co-chair in IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies 2011 (AEECT 2011). December 6-8, 2011.
- Session chair in the fourth International Conference on Advanced Engineering Computing and Applications in Sciences (ADVCOMP 2010). October 25-30, 2010, Florence, Italy. [Session # *ADVCOMP 6*: Computing Applications in Science].

Conference/Workshop Technical Committee membership

Many, since 2008.

13. Publications, Presentations, Technical Reports, and Thesis

Computer software

Year 2021

1. *Sulieman Bani-Ahmad, Ahmad Audeh*; **X-Rhythm**© **for Windows. Version 1.x.** A mini-tool used to do univariate and two-variate statistical analysis and charting for university course-grades. The software is capable of performing quick focused exploratory analysis of the scores in-hand and automatically convert them into grades with high level of flexibility and customization capabilities. The tool can also perform linear and non-linear transformations of the scores.

2. *Sulieman Bani-Ahmad, Ahmad Audeh*; **X-Acc**© **for Windows. Version 2.x.** A statistical analysis tool used to do basic and advanced statistical analysis and charting for university course-grades. The software is capable of (i) performing *univariate, bivariate and multi-variate* statistical analysis of course grades, (ii) producing stem-and-leaf and histogram plots, (iii) generate wide spectrum of plots-types.

Year 2020

3. *Sulieman Bani-Ahmad, Ahmad Audeh;* **X-Diff**© **for Windows. Version 1.x.** A mini-tool used to compute similarity and overlapping levels between a closed set of text documents. Those text documents in teaching context are homework files submitted by students. Using this application, the instructor can identify copy-and-paste levels and plagiarism amongst students.

4. *Sulieman Bani-Ahmad, Ahmad Audeh*; **X-Swift**© **for Windows. Version 2.x.** A mini-tool used to import a set of multiple-choice question prepared in X-Simple© format and directly produce a ready-to-import Moodle XML format (for online exams). The tool can also produce printable tests. This mini-tool used to be a part of the X-Pro Milestone course-management software tool. X-Swift is a stand-alone application.

Year 2019

5. *Sulieman Bani-Ahmad, Ahmad Audeh*; **X(Chi)-Pro Milestone**© **for Windows. Version 6.x.** A course management system designed for university courses. The software helps university instructor create and maintain course-specific question banks and preparing printable or online exams from them.

Year 2015

6. *Sulieman Bani-Ahmad*, **X(Chi)-Pro Milestone for Windows 7 and Windows 8**. **Version 5**. For Windows Operating System. The software helps university instructor create and maintain course-specific question banks and preparing printable exams from them. This version of the software supports Arabic language and come with much more features compared. [2015]. DOI: 10.13140/RG.2.1.5053.8484.

Year 2008

7. *Sulieman Bani-Ahmad*, **ExPro for Windows Vista and Windows 7**. **Versions 2.7, 2.7A and 2.8**. For Windows Operating System. The software helps university instructor preparing printable multiple-choice-based exams. This version of the software supports Arabic language and come with much more features compared to Version 1.0 of the software. [2008].

Year 2001

8. *Sulieman Bani-Ahmad*, **X-Pro for Windows NT and Windows 98**. **Version 1.0**. For Windows Operating System. The software helps university instructor preparing printable multiple-choice-based exams. [2001].

Journal papers

Year 2022

9. Malik~Braik, Mohammed~Awadallah, Mohammed Azmi Al-Betar, Sulieman Bani-Ahmad. Enhanced whale optimization algorithm for artificial neural networks training for non-linear system identification. Industrial winding process, Case Study. Expert Systems. Under review.

Year 2021

10. **Sulieman Bani-Ahmad**. "Processor Allocation in Two-Dimensional Mesh-based Multi-computer Systems: Protecting against Over-Partitioning and Maintaining Certain System Utilization Level". International Journal of Distributed and Cloud Computing (IJDCC). Volume 9 issue 1, 2021.

Year 2019

11. O Dorgham, I Al-Mherat, J Al-Shaer, **S Bani-Ahmad**, S Laycock, "Smart System for Prediction of Accurate Surface Electromyography Signals Using an Artificial Neural Network", Future Internet 11 (1), 25.

Year 2017

12. Mohammad Mostafa, Afag Salah, *Sulieman Bani-Ahmad*, Abd Elrahman Elfaki. "A comparative Survey on Arabic Stemming: Approaches and Challenges". Intelligent Information Management (IIM). Vol.9 No.2, March 2017. DOI: 10.4236/iim.2017.92003.

13. *Sulieman Bani-Ahmad*. "𝓧-Pro Milestone: Comparative Evaluation against Similar Software Tools, Current Status, and Planned Future Directions". Creative Education (CE). Vol.8 No.4, April 2017. Pages 627-649. doi: 10.4236/ce.2017.84048.

14. *Sulieman Bani-Ahmad*. "Bibliometry-Aware and Domain-Specific Features for Discovering Publication Hierarchically-Ordered Contexts and Scholarly-Communication Structures". Social Networking (SN). Volume 6. Number 1. DOI: 10.4236/sn.2017.61005 http://www.scirp.org/Journal/PaperInformation.aspx?PaperID=73496.

15. *Sulieman Bani-Ahmad,* **Saleh Sa'adeh**. "**Scalability of the DVFS Power Management Technique as Applied to 3-Tier Data Center Architecture in Cloud Computing**". Journal of Computer and Communications (JCC). Volume 5. Number 1. DOI: 10.4236/jcc.2017.51007 http://www.scirp.org/Journal/PaperInformation.aspx?PaperID=73633 .

Year 2016

16. Othman Jabir, Saleh Oqeili and Sulieman Bani-Ahmad. **Shape-and Orientation-independent 2D-Buddy Processor Allocation Strategy in 2-D Mesh-based Multicomputers**. Research Journal of Applied Sciences, Engineering and Technology, 13(9): 682-689. November 2016.

17. DOI: 10.19026/rjaset.13.3341Zaid Mustafa, J. J. Alshaer, O. Dorgham, *S. Bani-Ahmad*. "**Communication-Load Impact on the Performance of Processor Allocation Strategies in 2-D Mesh Multicomputer Systems**". International Journal of Advanced Computer Science and Applications(IJACSA), Volume 7 Issue 3, 2016. DOI : 10.14569/IJACSA.2016.070343.

Year 2015

18. *Sulieman Bani-Ahmad*. "**Toward Developing a Syllabus-Oriented Computer-Based Question-Banks Software to Support Partially Computerized Exams**". Journal of Software Engineering and Applications (JSEA). Vol.8 No.5, August 2015. PP. 252-268. DOI: 10.4236/jsea.2015.85026

19. Hashem A. Isa, Saleh Al-Oqaili, *Sulieman Bani-Ahmad*. "**The Subset-Sum Problem: Revisited with an Improved Approximated Solution**". International Journal of Computer Applications (IJCA). Volume 114, Number 14, 2015. [Foundation of Computer Science, New York, USA].

Year 2014

20. L Al-Matarneh, A Sheta, *S. Bani-Ahmad*, J Alshaer, I Al-oqily. **Development of Temperature-based Weather Forecasting Models Using Neural Networks and Fuzzy Logic.** International Journal of Multimedia and Ubiquitous Engineering 9 (12), 343-366. 2014.

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14. Research Projects

[RP19] The X-Rhythm project: [September 2021 – Now]. This project aims at designing and implementing a user-friendly mini-tool used to do univariate and two-variate statistical analysis and charting for university course-grades. The current version of the developed software-tool is capable of performing quick focused exploratory analysis of the scores in-hand and automatically convert them into grades with high level of flexibility and customization capabilities. The tool can also perform linear and non-linear transformations of the scores.

[RP18] The X-Acc project: [January 2021 – Now]. This project aims at developing a tool that can perform statistical analysis and charting for university course-grades. The software should be capable of (i)

performing group-based statistical analysis of course grades, (ii) producing stem-and-leaf and histogram plots, (iii) generate wide spectrum of plots-types.

[RP17] The X-Diff project: [April 2020 – Now]. The project aims at designing and implementing a tool that can compute similarity and overlapping levels between a closed set of text documents. Those text documents - in the context of teaching - are homework files submitted by students. Using this application, the instructor can identify copy-and-paste levels and plagiarism amongst students.

[RP16] The X-Swift project: [May 2019 – Now]. This project aims at designing and implementing a mini-tool that can be used to import a set of multiple-choice question prepared in X-Simple© format and directly produce a ready-to-import Moodle XML format (for online exams). The tool can also produce printable tests. This mini-tool used to be a stand-alone application that simplifies much of the complexities of item-banking software (the X-Pro Milestone course-management software tool).

[RP15] Bounded Gradual Request-Partitioning-based processor allocation strategies in 2D mesh-based multicomputers with feedback control: [May 2016 – Now]. Request-partitioning-based allocation approaches combine the desirable features of both contiguous and non-contiguous allocation strategies for 2D mesh-based parallel computers. Request-partitioning-based strategies work by gradually partitioning parallel requests at their longest dimension until job allocation succeeds. The number of partitions a job can be partitioned into must be bounded to avoid over-partitioning. The goal of this project is to propose and evaluate (through computer-based simulation) mechanisms that keep the upper-bound of the number of partitions under control.
Project members: *Sulieman Bani-Ahmad.*

[RP14] Modeling and Regenerating Nerve Signals for Forearm Human Muscles [August 2015 – Now]: the goal of this course is to collect a sample of nerve signals for Forearm Human Muscles using Aruino and Intel Galileo controller boards and study them to produce a mathematical or neural-network based models. One possible technique to examine in order to have a model with high accuracy is to do smoothing the raw signals through passing them through suitable filters. Once models are built, we intend to reproduce the same set of signals to pass them to muscles. This project aims at helping patients with moving disabilities to rehabilitate faster.
Project members: *Sulieman Bani-Ahmad, Osama Dorgham and Ali-Bani Ahmad (The University of Tabuk, KSA).*

[RP13] Modeling and Regenerating Nerve Signals for Forearm Human Muscles [August 2015 – Now]: the goal of this course is to collect a sample of nerve signals for Forearm Human Muscles using Aruino and Intel Galileo controller boards and study them to produce a mathematical or neural-network based models. One possible technique to examine in order to have a model with high accuracy is to do smoothing the raw signals through passing them through suitable filters. Once models are built, we intend to reproduce the same set of signals to pass them to muscles. This project aims at helping patients with moving disabilities to rehabilitate faster.
Project members: *Sulieman Bani-Ahmad, Osama Dorgham and Ali-Bani Ahmad.*

[RP12] Developing a Special-Purpose Software to Facilitate the Analysis of Scores for University Courses [August 2015 – Now]: The scores that students receive in university courses are assumed to reflect the level at which the objectives are achieved in a given course. In this project, we develop software that facilitates score analysis for inexpert users that allows them to do basic and advanced education-related statistical analysis of scores and help in properly interpreting the outcome of this analysis. Users of this system are not assumed to know how to use specialized software that is available in the market off-the-shelf. The reason is that such software is usually difficult to configure and use by naive inexperienced users. The software to be developed is intuitive.
Project members: *Sulieman Bani-Ahmad and others.*

[RP11] Syllabus-Specific and Portable Course Question Banks (http://sites.google.com/site/theexprosite/) [January 2015 – Now]: The project aims at developing Windows-based software that enables instructors to create and maintain syllabus-specific personal question banks for the courses they teach. The software also allows them to produce exam instances out of these question banks. The produced exams are printable and are provided with proper answer key. Through this project, we developed X-Pro Milestone; a trial version of this software is available online.

Project members: *Sulieman Bani-Ahmad.*

[RP10] Request-Partitioning-based processor allocation strategies in two dimensional mesh-based multicomputers: [May 2010 – February 2011]. Request-partitioning-based allocation approaches combine the desirable features of both contiguous and non-contiguous allocation strategies for 2D mesh-based parallel computers. Request-partitioning-based strategies work by partitioning parallel requests at their longest dimension. The goal of this project is to propose and evaluate (through computer-based simulation) the performance of a number of allocation algorithms that are based on this approach; the approach of request-partitioning.
Project members: *Sulieman Bani-Ahmad.*

[RP09] "Automatic Detection and Classification of the Ghor-area Plant Diseases" (ADCGPD): [February 2010 – present]. The main goal of the ADCGPD project is to develop and implement a software solution to detect and classify the main diseases that can be observed in al-Ghor area in the Jordan valley. The first step of this project was to provide a solution for detecting and classifying five diseases; they are: Early scorch, Cottony mold, Ashen mold, late scorch, and tiny whiteness. As a next step, we are working on automatically estimating the severity level of the detected disease in addition to identifying it.
Project members: *Sulieman Bani-Ahmad, Alaa F. Sheta,* Malik Braik, Dheeb Al Bashish.

[RP08] Example-based Search in Literature Digital Libraries: [February 2009 – September 2011]. In example-based searching, users look for the set of most similar publications to a given one. This requires estimating similarities between publications. A tf.idf formula can be used to compute publication-to-publication text-based similarity, e.g., the Okapi BM25 formula. Studies show that augmenting the importance of search terms in the BM25 formulae improve similarity scores. To this end, in this project we introduced and experimentally evaluated a term-ranking technique and use it for improving publication similarity scores. The proposed term-ranking technique is a modification of the well-known TextRank algorithm that utilizes the PageRank algorithm to identify the important term/phrases within texts. We found that the proposed approach works well when paired with Okapi BM25.
Project members: *Sulieman Bani-Ahmad,* Ghadeer al-Dweik.

[RP07] The ExPro Project (http://sites.google.com/site/theexprosite/) [Started in 1999 and resumed in July 2008 – June 2010]: The ExPro is Windows-based software solutions that help instructors (i) prepare, manage multiple-choice-based exams and (ii) easily produce exam-forms out their exams with minimal efforts. The ExPro software is available for download free of charge.
Project members: *Sulieman Bani-Ahmad,* Ahmad Audeh (from Yarmouk University, Jordan).

[RP06] Context-based Search in Literature Digital Libraries: The goal of this project is to assign publications into pre-specified ontology-based contexts, compute relevancy scores for papers with respect to their assigned context(s), perform search within automatically selected contexts, and rank and return selected papers within their contexts. With this new approach, (a) the output is enhanced by a highly useful paper classification (based on contexts), which also eliminates topic diffusion and reduces output size, and (b) only semantically related papers in contexts of interest, as opposed to all papers, are involved in the ranking.
Project members: Nattakarn Ratprasartporn, Ali Cakmak, Sulieman Bani Ahmad, Gultekin Ozsoyoglu.

[RP05] Publication Similarity, Scoring and Ranking Measures: Publication searching based on keywords provided by users is traditional in digital libraries. While useful in many circumstances, the success of locating related publications via keyword-based searching paradigm is influenced by how users choose their keywords. Example-based searching, where user provides an example publication to locate similar publications, is also becoming commonplace in digital libraries. Existing publication similarity measures, needed for example-based searching, fall into two classes, namely, text-based similarity measures from Information Retrieval, and citation-based similarity measures based on bibliographic coupling and/or co-citation. This project explores alternative publication similarity measures, ranking and scoring mechanisms.
Project members: Sulieman Bani Ahmad, Ali Cakmak, Gultekin Ozsoyoglu.

[RP04] Evaluation of Publication Scoring Schemes in Context-based Search Environment: Context-based literature digital library search is a new searching paradigm that allows for an effective ranking of query outputs, and controls the diversity of query output topics. Contexts are defined by pre-specified ontology-

based terms, and a paper set of a context is located based on the semantic properties of the ontology (context) term. In order to provide a comparative assessment of papers in a context and to effectively rank papers returned in search outputs, prestige scores are attached to all papers with respect to their assigned contexts. This project explores the effectiveness of different prestige score functions for context-based environment, namely, citation-based, text-based, and pattern-based score functions. PubMed publications are used as the test bed for the experiments, and Gene Ontology is employed as the context hierarchy.
Project members: Nattakarn Ratprasartporn, Sulieman Bani Ahmad, Ali Cakmak, Gultekin Ozsoyoglu.

[RP03] Estimating Future Paper Scores using Temporal Citation Patterns: Scientific papers often cite other papers to discuss the related work in their field, and also point out the differences/improvements in comparison to the other similar papers. Based on the citation information, a literature database can be considered as a graph, called citation-graph, where the nodes are the papers, and there is a directed edge from a paper A to paper B if A cites B. The same setting also applies to the web environment where nodes are individual web pages or sites, and the edges are the hyperlinks from one page to the other. Assigning prestige scores to papers or web pages is a common practice. PageRank is recently the most popular ranking algorithm variations of which are used by almost all the search engines to rank the web pages, and order them accordingly in a search result. PageRank is also used to assign importance scores to papers using the underlying citation graph as input. Once a paper is published, it takes time for the paper to be recognized, and get cited by the other papers. In average, it may take from 5 to 20 years for a paper to reach its peak prestige scores. Therefore, for newly published high quality papers, the PageRank may provide relatively low scores due to the fact that the paper does not have enough citations shortly after it is published. In order to tackle with this bias, this project focuses on mechanisms to characterize the nature of very first citations that a paper gets, and use it as an indicator towards the final score of a paper. To this end, temporal citation patterns in multiple dimensions are studied.
Project members: Sulieman Bani Ahmad, Ali Cakmak, Gultekin Ozsoyoglu.

[RP02] Case Explorer (http://nashua.case.edu/caseexplorer) [August 2004 –April 2008]: Case Explorer is a score-guided searching and querying prototype portal for ACM SIGMOD Anthology, a digital library for the database systems research community, containing about 15,000 papers.
Project members: Gultekin Ozsoyoglu, *Sulieman Bani-Ahmad,* Ali Cakmak, Natakarn Ratprasartporn.

[RP01] elGiza (http://www.elgiza.net) [June 2007 – April 2008]: A Prototype Search Tool for searching Online-Literature Digital Libraries (OLDLs). The name came from the fact that this search tool is based on research pyramids. More details can be found in my publication in ECDL 2007 titled by "On Improved Publication Scores for Online Digital Libraries".
Project members: *Sulieman Bani-Ahmad,* Gultekin Ozsoyoglu.

15. Research Achievements, Honors and Awards

- **Honored by the University of Tabuk** (UoT) located in the King for participating in the Measurement and Evaluation Symposium held at UoT between 2-3 of March, 2015.
- **Honored by the president of Prince Sumayya University of Technology (PSUT)** for being a steering committee member of the 2012, 2013 Arab Collegiate Programming Contest, held at Prince Sumayya University of Technology and at Applied Science University.
- **Honored by the** chairperson of the IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies 2011 (AEECT 2011). December 6-8, 2011, for being a Steering committee member.
- **Most Active Reviewer Award.** *The International Arab Journal of Information Technology.* 2011/2012.
- **Distinguished efforts in advising**. *The chairman of the department of Information Technology* at Al-Balqa Applied University for distinguished efforts in advising the students of the department during the periods of courses' registration. December 2010.
- **Distinguished Faculty Award**: *Honored by the chair of the Information Technology Department* at Al-Balqa Applied University for achievements in *teaching and research*. December 2010. [Link].
- **Distinguished Professor Award**: *Honored by the dean* of faculty of science and information technology on the "science day of the school" for achievements in research (for receiving best paper award from IADIS IS 2009). May 2009. [Link].
- ***Best Paper Award*** from International Conference on Information Systems (IADIS IS) 2009, Barcelona, Spain, 25 - 27 February 2009. [Link].

- **Research achievement**: Proposed the *popularity growth and decay model* for publications – Digital Libraries. (March 2008).
- **Research achievement**: Designed a scalable content-driven search-keyword suggester for online digital libraries. (February 2008).
- **Research achievement:** Experimentally validate the *Research Pyramid Model* of research development. (Sep 2007).
- **Student best report award**: One of the best "*detailed and informative classroom observation*" report, a requirement of TA Seminar at CWRU, (November 2004).
- **Scholarship** to work for PhD from Al-Balqa Applied University- Jordan. (May 2003).
- **Honored by the president of Al-albayt University** for achievements in teaching.
- **Rank one** in class at al-Albayt University, (July 2002).
- **Dean's honored** list at Jordan University of Science and Technology, (January 1995).
- **Honored by the headmaster** of Sakib High School for being active report writer, Biology class. (1991). This keeps me smile till today as I was not expecting it or even looking forward to it.
- **Best scientific report**, "Types of Cancer Disease: A survey", Ministry of Education-Jerash, I was in the 9th grade at that time. (1992).

16. Graduate Student Supervision

Master thesis

1. *Ibrahim Mherat.* **Modeling Nerve Signals for Forearm Human Muscles**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2015/2016.
2. *Salih Saadih.* **Scalability of the DVFS Power Management Algorithm Applied on Three-Tier Data Centre Architecture in Cloud Computing**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2015/2016.
3. *Othman Jabir.* **Enhanced and Flexible 2-D Buddy System for Processors Allocation in 2-D Mesh-Based Multicomputers**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2012.
4. *Zaid Mustafa Al-Lami.* **Communication Impact on Non-Contiguous Allocation Strategies for 2-D Mesh Multicomputer Systems**. Master thesis. Computer Information Systems Department. School of Information Technology. Middle East University. 2012.
5. *AlMo'taz-Billah Ahmad Mbaydeen.* **Estimating the Severity Level of Different Plant Disease's using Image Segmentation Techniques: A Disease-Independent Approach**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2011.
6. *Laith Nasri AlMatarnih.* **Development of Temperature-based Weather Forecasting Models Using Neural Networks and Fuzzy Logic**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2011.
7. *Fatima Aburumman.* **A Dynamic and Dictionary-Based Technique for Arabic Text Compression**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2011.
8. *Alaa Aljafari.* **Building Horizontal Institution-Specific Online Digital Libraries**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2011.
9. *Muneer Hassan.* **A New Approach for Sensitive Data Leakage Prevention Based on Viewer-Side Monitoring**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2011.
10. *Ghadeer Dwaik.* **Enhancing Relevance Score through Token-Ranking: A comparative Evaluation**. Master thesis. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2011. 2009/2010. [Successfully defended her thesis on the 24th of May, 2010. Ghadeer has joined King Abdulaziz University - KSA.

17. Master and Ph.D Thesis Defense Committee Membership

1. Maha Al-Jarah. **Attention-Based Deep Learning Approach for Detecting IoT BOTNET-Based Distributed Denial of Service Attacks**. **Master thesis**. School of Computer Engineering and Information Technology, Jordan University of Science and Technology. December, 2021. [External Examiner] [The supervisor is Prof. Mohammad Shurman and Prof. Basheer Al-Duwairi].

2. Nour Ahmad AlKloub, *Attention-Based Deep Learning Approach for Detecting IoT Botnet-based Distributed Denial of Service Attacks*, Faculty of Computer and Information technology, Department of Network Engineering and Security. Supervisor: Mohammad al-Shorman and Basheer Al-Duwairi. 2021.

3. Nour Ahmad AlKloub, *Deep Learning Model for Sentiment Analysis in Arabic Language*, Faculty of Communication and Information technology, Computer Science department. Supervisor: Nijad Al-Najdawi. 2019.

4. Mosab Fisal Khdaer, "*Digital Image Segmentation Using Monarch Butterfly Algorithm*", Faculty of Communication and Information technology, Computer Science department. Supervisor: Osama Mohammad Dorgham, 2019.

5. *Janani V*, *Study and Evaluation of Cloud Based Open Source Performance Testing Tools for Web Applications*. **Ph.D. Thesis**, Faculty of Information and Communication Engineering. Anna University. Chennai, India. 2016.

6. *Ibrahim Mherat*. *Modeling Nerve Signals for Forearm Human Muscles*. **Master thesis**. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2015/2016.

7. *Sanad Abu-Ras*. *Proposed System for Analyzing Real Time Human Motion in Surveillance Video for Elderly Fall Detection.*. **Master thesis**. Computer Science Department. School of Information Technology. Al-Balqa Applied University. 2015/2016.

8. Yahya Ahmad Yahya. **On the Use of TCP for Transporting Power Grid Synchrophasor Measurements**. **Master thesis**. School of Computer Engineering and Information Technology, Jordan University of Science and Technology. May, 2013. [External Examiner] [The supervisor is Dr. Ahmad Al-Hammouri].

9. Salama M .Hasan, **Static Tasks Scheduling in Real TimeMulti processor System Using Genetic Algorithm**. **Master thesis**, School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University, May 2012. [Committee member] [The supervisors are Dr. Mohammad Ababneh].

10. Fadi Fahed Odeh, **Associative Classification Mining based on Naïve Bayesian Method**. **Master thesis**, School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University, May 2012. [Committee member] [The supervisors are Dr. Najad Al-Najdawi].

11. Alaa Aljafari. **Building Horizontal Institution-Specific Online Digital Libraries**. **Master thesis**. Computer Science Department. School of Information Technology. Al-Balqa Applied University. May 2012. [Chairman].

12. Laith Nasri AlMatarnih. **Identification of Common Plant Diseases in Al-Ghor Area using Image Segmentation Techniques and Radial Basis Function Networks**. **Master thesis**. Computer Science Department. School of Information Technology. Al-Balqa Applied University. May 2012. [Chairman].

13. Oduy Samarah Alzoubi. **Reverse Engineering of Web Application to UML Presentation Model Using Vision Based Segmentation Method**. **Master thesis**. School of Computer Engineering and Information Technology, Jordan University of Science and Technology. April, 2012. [External Examiner] [The supervisor is Dr. Natheer Khasawnih].

14. Rola Qassim Obeidat. **A comparison study of Peer to Peer video streaming scheduling algorithms**. **Master thesis**. School of Computer Engineering and Information Technology, Jordan University of Science and Technology. May, 2012. [External Examiner] [The supervisor is Dr. Mohammad Fraiwan].Fatima Aburumman. *A Dynamic and Dictionary-Based Technique for Arabic Text Compression*. Master thesis. School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University. May, 2011. [Co-supervisor, Committee member].

15. Rami Shawkat Hatem Al-Salman, *Mining Client Side Paradata for Adaptive Webpages*. **Master thesis**, School of Computer Engineering and Information Technology, Jordan University of Science and Technology, March 2011. [External Examiner] [The supervisor is Dr. Natheer Khasawnih].

16. Muneer Hassan. *A New Approach for Sensitive Data Leakage Prevention Based on Viewer-Side Monitoring*. **Master thesis**. School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University. December, 2010. [Chairman].

17. Anmar A. Aljanabi, *A Proposed Technique Supporting Fast Access to Data Warehouse*. **Master thesis**, School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University, August 2010. [Committee member] [The supervisors are Dr. Basim Alhadidi and Prof. Alaa Alhamami].

18. Ala' S. Al-Afeef, *Image Reconstructing in Electrical Capacitance Tomography of Manufacturing Process Using Genetic Programming*. **Master thesis**, School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University, July 2010. [Committee member] [The supervisors are Prof. Alaa Sheta and Dr. Adnan al-Rabea].

19. Ghadeer Dwaik, *Enhancing Relevance Score through Token-Ranking: A comparative Evaluation*. **Master thesis**, School of Science and Information Technology, Department of Information Technology, Al-Balqa Applied University, May 2010. [Chairman].
20. Rami Hailat, *Enhancing Text-Based Search for Web Images*. **Master thesis**, School of Computer Engineering and Information Technology, Jordan University of Science and Technology, January 2010. [External Examiner] [The supervisors are Dr. Natheer Khasawnih and Dr. Ahmad Al-Hammouri].

18. Research-related services

- External reviewer and evaluator of **funded research projects** (for a number of Jordanian universities)
- External reviewer and evaluator of university bachelor-level programs (for the benefit of **Ministry of Higher Education & Scientific Research** - *Accreditation & Quality Assurance Commission for Higher Education Institutions*).

19. Personal Skills

- Motivating, Excellent communicator, Able to network.
- Desire to learn.
- Curiosity.

20. Professional and Technical Skills

- **Data science:** Python, R, Key data science modules in Python: NumPy, SciPy, Statistics, Pandas, Matplotlib, Seaborn, mlextend.
- **Data science tools**: Tableau, Pentaho, PowerBI, DAX, OpenRefine (GoogleRefine), KNIME, RapidMiner.
- **Data visualization in Python:** Python libraries: Matplotlib, Seaborn, Bokeh.
- **Data science Python IDEs**: Anaconda, Jupiter notebook, PyCharm, Thonny.
- **NoSQL databases**: MongoDB (Document database).
- **Database management systems (SQL databases)**: Microsoft SQL Server, Oracle, and MySQL, PostgreSQL.
- **DBMS tools**: MySQL Workbench
- **IoT programming**: Arduino and Intel Galileo boards programming, ΞТΞ DIDACTIC GMBH Sensorics CPS-i40.
- **IoT event-driven programming and electronic prototyping platform**: Node-RED, Arduino.
- **IoT technology education providers**: ΞТΞ DIDACTIC GMBH [IIoT Gateway 70077, IIoT Basics (From the sensor to the cloud).
- **Platforms/ Operating Systems**: Windows and UNIX/Linux (Ubuntu Linux mainly).
- **Web Programming**: PHP, HTML, JavaScript, and CSS, Node.JS (runtime JS environment).
- **Web development CMS (Content Management Systems):** (PHP-based) Wiki software, WordPress.
- **UNIX programming**: Bash shell scripting.
- **Programming languages**: C, C++, C#, Java, and MatLab.
- **Windows desktop programming languages and IDEs**: C#, Visual Basic, Microsoft Visual Studio.

21. Some important websites that I manage

- My personal website: www.sulieman.net
- The X-Pro Project website: http://sulieman.net/xpro
- A website for bachelor-level courses I teach: http://sites.google.com/site/suliemancourses
- A website for master-level courses I teach: http://sites.google.com/site/mygrcourses

22. Services as Trainer

August 25, 2021	**X-Swift 3.x and X-Pro Milestone**: A training session on how to use X-Swift exam-preparation tool and "X-Pro Milestone" item-banking software (with focus on features specially designed for distance learning during the Coronavirus pandemic period). **Where:** Jordan University of Science and Technology.
June 20, 2021	**X-Swift 3.x**: A training session on how to use X-Swift exam-preparation tool (with focus on features specially designed for distance learning during the Coronavirus pandemic period). **Where:** Jordan University of Science and Technology.
January 2021 multiple times	**X-Swift 3.x**: A training session on how to use X-Swift exam-preparation tool (with focus on features specially designed for distance learning during the Coronavirus pandemic period). **Where:** Yarmouk University.
June 2015 – now. multiple times	**X-Pro Milestone – Advanced level**: ToT (Training of Trainers) intensive course on how to use X-Pro Milestone. **Where:** Measurement and Evaluation Unit (MEU), University of Tabuk, Saudi Arabia.
June 2015 – now. multiple times	**Introduction to X-Pro Milestone – The Basics**: ToT (Training of Trainers) intensive course on how to use X-Pro Milestone. **Where:** Measurement and Evaluation Unit (MEU), University of Tabuk, Saudi Arabia.

23. Special Training Accrued

23, November 2021	**ETS DIDACTIC GMBH** IIoT Gateway 70077, IIoT Basics (From the sensor to the cloud). *Preparing the environment*: updating the IIoT gateway software (on a micro SD-Card), installing and configuring the "SIMATIC WinCC Unified PC" software, installing and configuring the Siemens TIA (Totally Integrated Automation Portal (TIA Portal)) software, setting up and configuring the Node-RED software of the IIoT gateway. **Where**: online training, Al-Balqa Applied University campus.
19 August 2021	**ETS DIDACTIC - Training for Sensorics CPS-i40** The Basics of Sensor Technology (Day 1 of IoT intensive course) **ETS DIDACTIC GMBH, Germany** **Where**: online training, Al-Balqa Applied University campus.
30 May 2015 – 11 June 2015. 80 training hours	**Intel® Galileo Technical Training**: ToT (Training of Trainers) intensive course on how to program Intel Galileo board. **Certified by** Intel Education Service Corps, Intel Corporation. And by USAID JCP (Jordan Competitiveness Program) **Where:** Amman, Jordan.
16th and 23rd of May 2015	**Intel Ideation Camp** **Certified by** Intel, USAID JCP (Jordan Competitiveness Program) and "BEYOND EXCELLENCE" **Where:** Amman, Jordan.

Wednesday, November 10, 2010	**The Cloud Computing revolution**: how can Jordanian companies capitalize on it, and an overview of Windows Azure. Presented by Naseem Tuffaha, Microsoft General Manager of Middle East and Africa. Suliman Battat, Technical Community Member and Evanteck co-founder. Prince Sumaya University for Technology. **Where**: Amman, Jordan
July 24 - 29 2005	Modern Software Development using Microsoft .NET Framework **Where: Lake Forest College**, Lake Forest, IL, USA

24. References

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