

Sahel Alouneh (Full Professor)

Dean, School of Electrical Engineering and Information Technology, German Jordanian University

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PERSONAL INFORMATION

Birth Date: 18 August 1977
Gender: Male
Residence Location: Amman, Jordan
Nationality: Jordanian, Canadian

EDUCATION

August 2008: **Concordia University**, Montreal, Canada
Doctorate, Electrical and Computer Engineering
Thesis title: On MPLS Security and Fault Tolerance

October 2004: **Concordia University**, Montreal, Canada
Master's degree, Electrical and Computer Engineering
Thesis title: A New Method for Testing Buffer Overflow Vulnerabilities in C and C++ Programs.

June 2000: **Jordan University of Science and Technology**, Irbid, Jordan
Bachelor's degree, Electrical and Computer Engineering

PUBLICATIONS

Refereed Journal papers

1. Mohannad Alhanahnah, Peter Bertok, Zahir Tari, [Sahel Alouneh](#), "Context-Aware Multifaceted Trust Framework for Evaluating Trustworthiness of Cloud Providers", In Future Generation Computer Systems, **Elsevier**, Volume 79, Part 2, 2018, Pages 488-499. (*Thomson Reuters ISI*).
2. Feras Al-Hawari, Mahmoud Al-Ashi, Fares Abawi, and [Sahel Alouneh](#), "A Practical Three-Phase ILP Approach for Solving the Examination Timetabling Problem", International Transactions in Operational Research, **John Wiley**, *in press*, September 2017. (*Thomson Reuters ISI*)
3. Raed Mesleh, Omar Hiari, Abdelhamid Younis and [Sahel Alouneh](#), "Transmitter Design and Hardware Considerations for Different Space Modulation Techniques", **IEEE Transactions** on Wireless Communications, *In press* (published online), September 2017. (*Thomson Reuters ISI*)
4. Raed Mesleh, Salama Ikki, Iyad Tumar, [Sahel Alouneh](#), "Decode-and-forward with quadrature spatial modulation in the presence of imperfect channel estimation", Journal of Physical Communication, **Elsevier**, Volume 24, 2017, Pages 103-111. (*Thomson Reuters ISI*)
5. Gebremariam Mesfin, Gheorghita Ghinea, Tor-Morten Grønli, [Sahel Alouneh](#), "REST4Mobile: A Framework for Enhanced Usability of REST Services on Smartphones", Concurrency and Computation: Practice and Experience, **John Wiley**, Published online 23 May 2017 (DOI: 10.1002/cpe.4174). (*Thomson Reuters ISI*)
6. [Sahel Alouneh](#), Saed Abed, and George Ghinea, "Security of VoIP traffic over low or limited bandwidth networks". Security Communication Networks, **John Wiley**, Volume 9, pp. 5591–5599, 2017. (*Thomson Reuters ISI*)
7. Mohannad J. Alhanahnah, Arshad Jhumka, and [Sahel Alouneh](#), "A Multidimension Taxonomy of Insider Threats in Cloud Computing", The Computer Journal, **Oxford Publication**, Volume. 59, Issue. 11, Nov, 2016. (*Thomson Reuters ISI*)
8. [Sahel Alouneh](#), Mazen Kharbutli, Rana Alqurem, "Software Approach for Stack Memory Protection Based on Duplication and Randomisation", International Journal of Internet Technology and Secured Transactions, **INDERSCIENCE**, Volume 6, Issue 4, 2016. (Scopus)

9. *Sahel Alouneh*, Heba Bsoul, Mazen Kharbutli, “A Software Tool to Protect Executable Files from Buffer Overflow Attacks”, *International Journal of Internet Technology and Secured Transactions*, **INDERSCIENCE**, Volume 6, Issue 2, 2016. (Scopus)
10. *Sahel Alouneh*, Mohammad Al-Shayegi, Sa’ed Abed, M.D. Samrajesh, and Sari Sultan, “FPGA enhanced implementation of ECG QRS complex detection algorithm”, *International Journal of Circuits, Systems, and Signal Processing*, Volume 9, 2015. (Scopus)
11. *Sahel Alouneh*, Saed Abed, Basim Jamil Mohd, Mazen Kharbutli, “MPLS Technology in Wireless Networks”, *Journal of Wireless Networks (WINET)*, **Springer**, Vol 20. No. 5, July, 2014. (*Thomson Reuters ISI*)
12. *Sahel Alouneh*, Sa’ed Abed, Bassam J. Mohd, Ahmad Khasawneh, “Software Comprehension Based on Database Relational Algebra”, *International Journal of Information and Communication Technology*, **INDERSCIENCE**, Vol. 6, No. 1, 2014. (Scopus)
13. *Sahel Alouneh*, Sa’ed Abed, Bassam Jamil Mohd, Mazen Kharbutli, “An Efficient Backup Technique for Database Systems Based on Threshold Sharing”, *Journal of Computers*, Vol 8, No 11, 2013. (Scopus)
14. Bassam mohd, Saed Abed, *Sahel Alouneh*, “Carry-Based Reduction Parallel Counter Design”, *Journal of International Journal of Electronics*, **Taylor & Francis**, 2012. (*Thomson Reuters ISI*)
15. Sa’ed Abed, Ashraf Hasan Bqerat, *Sahel Alouneh*, Bassam Jamil Mohd, “A novel approach to enhance distributed virtual memory”, *Journal of Computers and Electrical Engineering*, **ELSEVIER**, in press, 2012. (*Thomson Reuters ISI*)
16. Saed Abed, Basim Jamil, Ziad Al-Bayatti, *Sahel Alouneh*, “Low Power Wallace Multiplier Design based on Wide Counters”, *International Journal of Circuit Theory and Applications*, **John Wiley & Sons**, 2011. (*Thomson Reuters ISI*)
17. *Sahel Alouneh*, Anjali Agarwal, Abdeslam En-nouaary, “A Novel Path Protection Scheme for MPLS Networks Using Multi-path Routing”, *Journal of Computer and Telecommunications Networking*, **ELSEVIER**, Vol. 53, Issue 9, June 2009, pp. 1530-1545. (*Thomson Reuters ISI*)
18. *Sahel Alouneh*, Abdeslam En-nouaary, Anjali Agarwal, “MPLS Security: An approach for Unicast and Multicast Environments”, *Annals of Telecommunication*, **Springer**, Vol. 64, Issue 5, 2009, pp. 391-400. (*Thomson Reuters ISI*)
19. *Sahel Alouneh*, Abdeslam En-Nouaary, and Anjali Agarwal, “Providing Data Confidentiality, Integrity, Availability, and IP Spoofing Protection for MPLS Networks”, *Special issue in the Journal of the Scientific & Practical Computing*, 2008.
20. *Sahel Alouneh*, Abdeslam En-Nouaary, and Anjali Agarwal, “A Multiple LSPs Approach to Secure Data in MPLS Networks”, *Journal of Networks*, Vol 2, Issue 4, pp 51-58, August 2007. (Scopus)

Refereed Conference papers

1. *Sahel Alouneh*, Dhiah el Diehn Abou-Tair, Ala Khalifeh, Roman Obermaisser, “Service Identification Framework for Systems of Systems Based on MPLS Technology”, *The 12th International Conference on Future Information Technology (FutureTech 2017)*, **Springer**, Seoul, South Korea, May 22-24, 2017.
2. Dhiah el Diehn I. Abou-Tair, *Sahel Alouneh*, Ala Khalifeh, Roman Obermaisser, “A Security Framework for Systems-of-Systems”, *The 12th International Conference on Future Information Technology (FutureTech 2017)*, **Springer**, Seoul, South Korea, May 22-24, 2017.
3. *Sahel Alouneh*, Ismail Hababeh, Firas Al-Hawari and Thamer. Alajrami, “Innovative methodology for elevating big data analysis and security”, *2nd International Conference on Open Source Software Computing (OSSCOM)*, IEEE, Beirut, 1-3 December 2016, pp. 1-5.
4. Ismail Hababeh, Sahel Alouneh and Ala Khalifeh, “A Position Aware Mobile Application for E-Health Services”, *7th International Conference on Intelligent Systems, Modelling and Simulation (ISMS)*, IEEE, Bangkok, 25-27 January 2016, pp. 144-148.
5. *Sahel Alouneh*, Heba Bsoul, Mazen Kharbutli, “Protecting Binary Files from Stack-Based Buffer Overflow”, *6th International Conference on Information Science & Applications (ICISA2015)*, LNEE, **Springer**, Pataya, Thailand, February 24-26 2015, pp. 415-422.
6. Sa’ed Abed, *Sahel Alouneh*, “Optimization on QRS Chip for Minimum Latency”, *Proceeding of the 14th International Conference on Software Engineering, Parallel and Distributed Systems (SEPADS’15)*, Dubai, UAE, February 22-24, 2015, pp. 150-156.

7. *Sahel Alouneh*, Mazen Kharbutli, Rana Alqurem, “Stack Memory Buffer Overflow Protection Based on Duplication and Randomization”, 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN), **Elsevier, ScienceDirect**, Niagara Falls, Canada, October 21-24-2013, pp. 250-256.
8. *Sahel Alouneh*, Sa'ed Abed, Bassam Jamil Mohd, and Ahmad Khasawneh, “Relational Database Approach for Execution Trace Analysis”, proceeding of the **CIST12, IEEE**, Jordan, 2012.
9. Bassam Jamil Mohd, Thaeir Hayajneh, Sa'ed Abed, and *Sahel Alouneh*, “FPGA Hardware of the LSB Steganography Method”, proceeding of the **CIST12, IEEE**, Jordan, 2012.
10. Sa'ed Abed, Bassam Jamil, Bassam Alnaami, and *Sahel Alouneh*, “Design and Implementation of Interfacing two FPGAs”, proceeding of the 8th International Conference on Innovations in Information Technology, **IIT'12, IEEE**, UAE, 2012.
11. *Sahel Alouneh*, Sa'ed Abed, Ashraf Hasan Bqerat, Bassam Jamil Mohd, “A Methodology for Distributed Virtual Memory Improvement”, proceeding of the international conference of Informatics Engineering and Information Science (ICIEIS), Lecture Notes in Computer Science LNCS, Kuala Lumpur, Malaysia, Springer, Vol. 253, pp. 378–384, Nov 14-16-2011.
12. Bassam Jamil Mohd, Sa'ed Abed, Bassam Alnaami, and *Sahel Alouneh*, "Image Steganography Optimization Technique", proceeding of the International Conference on Advances in Signal & Image Processing - **ASP 2011, Springer**, Amsterdam, Netherlands, 2011.
13. Sa'ed Abed, *Sahel Alouneh* and Othmane Ait Mohamed, “Reliability of Recursive Concentrator Structure", In Proc. IEEE Symposium on Industrial Electronics & Applications (**IEEE ISIEA'09**), Kuala Lumpur, Malaysia, October 4-6, 2009, pp. 209-211.
14. *Sahel Alouneh*, Anjali Agarwal, Abdeslam En-nouaary, , “A New Approach for Security in MPLS Multicast Networks ”, proceeding of the 5th International Conference on Distributed Computing and Internet Technology, **Lecture Notes in Computer Science LNCS , Springer**, ICDCIT2008.
15. *Sahel Alouneh*, Anjali Agarwal, Abdeslam En-nouaary, “A Multiple Tree Approach for Fault Tolerance in MPLS Networks”, proceeding of the 4th International Conference on Distributed Computing and Internet Technology, **Lecture Notes in Computer Science LNCS , Springer**, ICDCIT2007, 17- 20 December 2007. (Acceptance rate 19%).
16. *Sahel Alouneh*, Abdeslam En-nouaary and Anjali Agarwal, “Providing Data Confidentiality in MPLS Networks,” Proceeding of the International Conference on New Technologies of Distributed Systems (NOTERE 2007), June 4-8, 2007. (Acceptance rate 26%). (**Selected as best paper**).
17. *Sahel Alouneh*, Abdeslam En-nouaary, Anjali Agarwal, “Securing MPLS network using Multi-path Routing”, Proceeding of the 4th IEEE International Conference on Information Technology : New Generations **IEEE/ITNG 2007**, Las Vegas, Nevada, USA, April 2-4 2007. (**Selected as best paper**).
18. *Sahel Alouneh*, Anjali Agarwal, Abdeslam En-nouaary, “A Novel Approach for MPLS Fault Tolerance”, in Proceeding of the Third IEEE International Conference of Innovations in Information Technology IIT'06, **IEEE**, Dubai, UAE, November 19-21 2006.
19. *S. Alouneh* and A. En-Nouaary, “A New Method for Testing Buffer Overflow Vulnerabilities in C and C++ Programs”, Fifth International Network Conference, Samos Island, Greece, July 2005.

GRANTS AND AWARDS

- A Bottom-up Approach for Opening up Education in South-Mediterranean Countries (OpenMED). GJU Investigators: Mohammad Daoud, Manar Fayyad, Salem Al-Agtash, Loay Salhieh, Rana Sabri, and **Sahel Alouneh**. Erasmus+ program - Key Action 2 - Capacity Building in the Field of Higher Education, European Commission. **Total amount of fund: 871,229.00 Euro**. Period: 1/10/2015-30/9/2018
- Partnership with Enterprises Towards Building Open Source Software Communities and Rejuvenation of Technical Education and Innovation (OSSCOM). GJU Investigators: Salem Al-Agtash, **Sahel Alouneh**, and Mohammad Daoud. TEMPUS Program (Trans-European Mobility Program for University Studies), European Commission. **Total amount of fund: 966,162.92 Euro**. Period: 1/3/2014-1/11/2017.
- BIOMed—New Horizons Biomedical Informatics Observatories in Mediterranean Region. GJU Investigators: **Sahel Alouneh** and Mohammad Daoud. FP7-PEOPLE-2012-IRSES - Funding scheme: Marie Curie Actions - International Research Staff Exchange Scheme (IRSES), EU. **Total amount of fund: 328,700.00 Euro**. Period:14/1/2015- 1/4/2017.
- Staff Mobility for Training mobility grant (between GJU and Siegen University - Germany). GJU Investigators: **Sahel Alouneh**, Dhiah Abou Tair, and Ala Khalifeh. Period: 2015-2018.

- Staff Mobility for Training mobility grant (between GJU and IPCA University - Portugal). GJU Investigators: Dhiah Abou Tair, Ala Khalifeh, and **Sahel Alouneh**. Period: 2016-2017.
- Kuwait University -Seed Grant, Co-applicant, Implementation of Arabic voice recognition based on FPGA, **Total fund amount: 69,000\$**, Period: 2015-2017.
- Self-Complementary Network- GJU Seed Grant. GJU investigators: Omar Al-Omari and Sahel Alouneh. **Total fund amount: 6300 JOD**. Period: 15/12/2016- 5/12/2018.
- Bilateral Lexicon for Idiomatic Expressions in the Arabic Language GJU Seed Grant: GJU investigators: Haytham Althawbiya, Omar Abu Nuwas, Eman Shashaa, and Sahel Alouneh. **Total fund amount: 12000 JOD**.
- Dean Fellowship Grant for Doctoral students, Concordia University 2006/2007
- Teaching Assistant fellowships, Concordia University 2003 -2008

THESIS SUPERVISED

- Rana Alkarem, M.Sc., “A SOFTWARE APPROACH FOR STACK MEMORY PROTECTION BASED ON DUPLICATION AND RANDOMIZATION”, Jordan University of Science and Technology, Jordan. (Graduated, Summer-2010). Co-supervised with Dr. Mazen Kharbulti.
- Heba Bsoul, M.Sc. candidate, “A SOFTWARE TOOL TO IDENTIFY AND FIX BUFFER OVERFLOW-PRONE CODE IN EXECUTABLES”, Jordan University of Science and Technology, Jordan. Co-supervised with Dr. Mazen Kharbulti.(Graduated 2011).
- Ma'moun Mansour, “STUDY ANALYSIS AND PERFORMANCE EVALUATION OF GOOGLE QUIC TRANSMISSION PROTOCOL”, GJU, Graduated May 2017.
- Thamer Al-Agrami, M.Sc., “SECURITY ISSUES IN BIG DATA”, GJU, In progress.

TEACHING & WORK EXPERIENCE

- **Acting Dean**, School of Computer Engineering and Information Technology **Sept, 2015**
– Present
German Jordanian University, Jordan
- **Vice Dean, Deanship of Scientific Research and Graduate Studies** **March, 2014 – April, 2015**
German Jordanian University
- **Associate Professor** **Dec., 2013 – Present**
Computer Engineering Department, School of Computer Engineering and Information Technology
German – Jordanian University, Jordan.

Teaching:

- CS361- Database management systems
- CS111- Computing fundamentals
- CE211- Digital Design
- CE341- Microprocessors and microcomputer systems
- CE352- Computer networks
- CE354- Computer Security
- CE599- Special topics in computer engineering
- CE704 Advanced computer networks and communications

Ability to teach:

Software Security , Protocol Design and Validation, Real time Multimedia and Communication Over Internet, Advanced Network Management, Software Engineering, Digital System Design and Synthesis, Multimedia Computing, Optical Networks: Architecture and Protocols.

Committees:

- German Jordanian University (GJU): University Council.
- GJU Scientific Research Committee.
- GJU Central Tendering Committee.
- GJU Admission and Transfer Committee.
- Head, Faculty Scientific Research and Graduate Studies.

- International Association for Armed Forces for Communication & Electronics Association (AFCEA) – Jordan Chapter.
- OSSCOM2015 Conference Preparation Committee.
- The establishment of the new IT infrastructure for the German Jordanian University permanent campus.
- Responsible for The university ERP system (Human resources, Financial, Registration, E-learning, and Procurement systems).
- Computer Engineering study plan.
- Communication Engineering study plan.
- Human Resources, responsible for interviewing and hiring new staff at the GJU University.

- **Director, Systems Information and Technology Center** **2009 – 2012**
German-Jordanian University, Amman

Main Duties:

1. Responsible for the establishment of the new network infrastructure for the permanent campus of German Jordanian University.
2. Supervises the information and communication technology (ICT) needs (infrastructure, hardware, and software) of the University in accordance with the University policies and mission.
3. Ensures proper functioning of the University’s systems; establishes, plans, and administers the overall policies and goals for the Center.
4. Meet ICT operations financial objectives by forecasting requirements, preparing an annual budget, and scheduling expenditures.
5. Manages personnel activities of staff (hire, train, appraise, reward, motivate, etc.)
6. Analyzes technology requirements and develops functional specifications; determines the technical specification of new hardware and software solutions as needed to meet the University’s demand.
7. Develops and maintains an excellent working relationship with other departments, units, and organizations, ensuring the University is well received and presented professionally and positively.

- **Assistant Professor** **2008 – 2013**
Computer Engineering Department, School of Computer Engineering and Information Technology
German – Jordanian University, Jordan

- **Visiting Professor** **August-September, 2013**
Hochschule Bremen, University of Applied Sciences, Germany.
Collaboration with Prof. Dr. Helmut Eirund, Dean, Electrical Engineering & Computer Science

- **Co-founder and program director for the new master program in computer engineering.**
The program starts in October-2013

- **Teaching Assistant** **2003- 2008**
Electrical and Computer Engineering Dept.
Concordia University, Canada

Teaching:

- COEN 243 Programming methodology I
- COEN 244/Programming methodology II
- COEN 345/Software Testing and Validation
- COEN 311/Computer Organization
- Programmer on duty.

- **Technical Customer Support** **2003**
Webhelp Inc., Montreal, Canada.

- **Computer Labs Supervisor and Teaching Assistant** **2000-2002**

Ajman University, United Arab of Emirates.

SPECIALIZED SKILLS

- C, C++, VHDL, MATLAB, Java Lex & Yacc parsers, Intel - Motorola Assembler, Fortran
- Windows servers, Microsoft Exchange 2010, UNIX, Linux.
- Flash and Director softwares for Multimedia Design.
- Network Simulator NS2, Qualnet.

TECHNICAL PROJECTS IMPLEMENTATIONS

- A tool for detecting buffer overflows vulnerabilities in C/C++.
- SNMP agent for an ftp application. (network management)
- Hotel reception software (Software Engineering life cycle approach is used in the implementation).
- Various Client/Server applications.
- ATM-IPv6 protocol specification using SDL (Protocol verification and Validation).
- VHDL Design and synthesis projects.
- IP telephony and Quality of service for networks.

WORKSHOPS

- “Health & Safety Workshop”, Concordia University, Canada, 2007
- “The IT Environment in Jordan”, organized by the Higher Council for Science and Technology, Amman, Oct. 2008.
- “Linksceem users meeting”, organized by JUNet, Jordan University, Nov. 2008.
- 12th Annual Jordan Education & Training Exhibition, JETE 2008, Oct. 29th –Nov. 1st, 2008.
- “National Conference for the Development of Study Plans, Teaching and Learning, and Scientific Research”, Organized by Ministry of Higher Education, and Columbia University, Amman, 2010.
- “Cisco Workshop for IT Executives”. Organized by Cisco briefing Center, London, UK, 2011.
- “How to qualify for ABET Accreditation Workshop”, organized by the Arab Organization for Quality Assurance in Education, Association of Arab Universities, AROQA, 2012.
- “Creation of office of grants and entrepreneurship at Jordanian universities”, Organized by The Higher Council of Science and Technology, Amman, 2014.
- “Android training and course development workshop” at UCLM University in Spain 22 – 26 September 2014.
- “How to write an H2020 proposals”, Organized by The Higher Council of Science and Technology, Amman, August 2014, March 2015.

REFERENCES

- Prof. Natherr Abu Obaid, Former President, German Jordanian University, E-mail: Natheer.AbuObeid@gju.edu.jo
- Prof. George Ghinea, Brunel University London College of Engineering. E-mail: george.ghinea@brunel.ac.uk