

Biographical Sketch

Azzam Sleit

azzam_sleit@yahoo.com

Azzam Sleit (former Minister of Information and Communications Technology 2013-2015) is a Professor of Computer Science, King Abdulla II School for Information Technology (KASIT), University of Jordan (UJ). He functioned as the Dean of KASIT and the Assistant President/Director of the Computer Center (2007-2009).

During a sabbatical leave from UJ, Prof. Sleit worked as a Principal Research Professor for KINDI Center for Computing Research, Qatar (2018-2020). Before joining the University of Jordan in 2005, he was the Chief Information Officer at Hamad Medical/ Ministry of Public Health, Qatar. Prof. Sleit has over thirty years of experience and leadership working at various levels of government, private and international sectors. Before joining Hamad Medical, He was the Vice President of Strategic Group & Director of Professional Services of Triada, USA, where he introduced the NGram Technology and Associative Memory Structures. The application of NGram technology helped Ford Motor Company to identify patterns of auto-parts failure and State of Michigan to recognize patterns of child abuse. Prof. Sleit served as the Regional Manager of Professional Services with Information Builders, USA. He oversaw six branches in the Midwest region of the United States with responsibility for program design and oversight of all projects in the region. From 1993 to 1996, Prof. Sleit was in charge of MetSource, a strategic unit of Metlife responsible for providing outsourced IT health insurance services for large companies such as AT&T, ABB.

Prof. Sleit has participated in numerous research activities related to Cloud Computing, Imaging Databases, Data Mining, Health and Management Information Systems and Software Engineering. He authored more than one hundred refereed research papers published in reputable journals and conferences. Since 1987, He has taught Engineering and Computer Science courses at various universities in the United States and Middle East maintaining high teaching standards. He supervised more than one hundred M.Sc. and Ph.D. students.

Dr. Sleit holds B.Sc, M.Sc. and Ph.D. in Computer Science. He received his Ph.D. in 1995 from Wayne State University, Michigan.

CURRICULUM VITAE

1. Personal Data

Name Azzam T. Sleit

ResearcherID: A-6366-2010

ORCID ID: 0000-0003-3383-6253

Google Scholar Citations:

https://scholar.google.com/citations?hl=en&user=yZ42G9YAAAAJ&view_op=list_works&sortby=pubdate

LinkedIn Profile: <https://www.linkedin.com/in/azzam-sleit-974a6418/>

ResearchGate Profile: https://www.researchgate.net/profile/Azzam_Sleit

ORCID: <http://orcid.org/0000-0003-3383-6253>

Researcher ID: <http://www.researcherid.com/rid/A-6366-2010>

Current Position:

Professor of Computer Science, King Abdulla II School of Information Technology, University of Jordan.

2. Fields of Specialization

- Cloud Computing and IoT
- Machine Intelligence including Image Processing and Databases
- Information Processing, Data Mining and Evolutionary Algorithms

3. Academic Qualifications, Awards and Membership

- **Ph.D. in Computer Science (GPA: 3.95/4.00)**, Wayne State University, Detroit, Michigan - February 1995.
- **M.Sc. in Computer Science & Engineering (GPA: 4.00/4.00)**, King Fahad University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia - 1989.
- **B.Sc. in Computer Science & Engineering (with high honors)**, King Fahad University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia - 1987.
- King Abdulla II Silver Prize for Excellence – Ministry of ICT, 2013.
- Gibralter Publishing Outstanding Award for Professional and Civic Achievements, 1999.
- Mark of Excellence: Information Technology Strategies and Professional Services Management, Information Builders, USA – 1998.
- Mark of Excellence: Software Specialty Qualification from IBM BESTeam – 1996-2000.
- Member: Hamad Medical Corporation Information Technology Steering Committee, 2000-2005.
- Member – Hamad Medical Corporation Policies and Standards Governance Committee, 2003-2005.

- Member: Hamad Medical City Information Technology Infrastructure Committee, 2003.
- Member: Association of Computing Machinery – since 1990.
- Member: American Management Association – since 1995.
- Member: Society of Computing and Radiology (SCAR) – since 2003.
- Listed in Who's Who International Professionals, 1999.

4. Positions Held

- Professor of Computer Science, University of Jordan, Amman, Jordan, since Jan 2012.
- Principal Research Professor, KINDI Center for Computing Research, Qatar University, 2018-2020.
- Dean of King Abdulla II School of Information Technology, 2015-2016.
- Minister of Information and Communications Technology, Government of Jordan, from 2013-2015.
- Chairman of the Board of Directors – Postal Saving Fund.
- Chairman of the Board of Directors – National Information Technology Center.
- Chairman of the Board of Directors – Jordan Postal Company
- Member of the Economic and Social Development Ministerial Committees.
- Director of Computer Center including university teaching hospital, University of Jordan, 2007 – 2009.
- Associate Professor, University of Jordan, Amman, Jordan, 2008 – 2012.
- Assistant Dean, University of Jordan, 2006 – 2007.
- Chief Information Officer, Hamad Medical/Ministry of Public Health, Qatar, 2003 – 2005
- Part-Time Professor, University of Qatar, 2000 – 2005.
- Projects Manager, Hamad Medical/Ministry of Public Health, Qatar, 2000 – 2003.
- Part-Time Professor, Computer Science Department, Wayne State University, Michigan, USA, 1995 – 2000.
- Vice President of Strategic Group & Director of Professional Services, Triada Ltd., Ann Arbor, Michigan, 1999 – 2000.
- Regional Manager, Information Builders, Troy, Michigan, 1997 – 1999.
- Senior Implementation Manager, Information Builders, Troy, Michigan, 1996 – 1997.
- Teaching Assistant, Computer Science Department, Wayne State University, Michigan, USA, 1990 – 1995.
- Technical Manager, MetLife, Southfield, Michigan, 1993 – 1996.
- Project Manager, EPCOM Corporation, Troy, Michigan, 1992 – 1993.
- Software Engineer, EPCOM Corporation, Troy, Michigan, 1990 – 1992.
- Research Associate, Advanced Transmission Design Department, Ford Motor Company, Livonia, Michigan / Wayne State University, 1990 – 1992.
- Teaching Assistant, Computer Science Department, King Fahad University of Petroleum and Minerals, 1987 – 1989.
- Systems Analyst, Saudi Consolidated Electricity Corp (SCECO), 1988 – 1990.

5. Conferences/Journals Program Committees

- Attended various Ministerial ITU conferences between 2013 and 2015.
- Editorial Board, International Journal of Digital Content Technology and Its Applications, since 2009.
- Technical Editor, Journal of Trends in Applied Sciences Research, (2005 – 2007).
- Technical Editor, Letters of Pattern Recognition, Elsevier, (2006-2007).
- Technical Editor, Asian Journal of Information Management, (2005 – 2007).
- Technical Editor, Information Technology Journal, (2006 – Present).
- Technical Editor, Journal of Applied Sciences, (2005 – 2007).
- Technical Editor, Journal of Software Engineering, (2005 – 2009).
- Program Committee (member), International Conference on Knowledge Generation, Communication and Management (KGCM), Florida, USA, since 2007.
- Program Committee (member), The World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI), USA, since 2006.
- Program Committee (member), International Conference on Digital Communications and Computer Applications (DCCA2007), Jordan, 2007.
- Editor: HMC Monthly Bulletin, Qatar, (2000 –2005).
- Member – Hamad Medical Corporation Policies and Standards Governance Committee, 2003.
- International Program Committee: IASTED on Software Engineering, (1995 – 2003).

6. Research & Development Projects (Funds over one million Dollars)

- Research fund from Qatar Research Funding Foundation - NPRP12S-0310-190277 entitled “Lightweight PLS Security Solutions for constrained IoT Devices”, Qatar 2019.
- Research fund from Qatar Research Funding Foundation - NPRP12S-0129-190017 entitled “Dangerous Driving Behavior Interventions Through the Usage of Telematics Data: Application to Young Drivers, Qatar 2018.
- Deploying 4G/LTE, MOICT, Jordan, 2015.
- E-government Project, MOICT, Jordan, 2013-2015.
- National Broadband Network Project, MOICT, Jordan, 2013-2015.
- Training and Developing Information Technology and Communications graduates, Jordan, 2013-2015.
- Upgrading the Data Center of the University of Jordan including network, servers, data storage and back up, email, website portal services, and security. Project Duration: 2 years (2007 - 2009), Jordan.
- Planning & Developing a complete Information Technology Software and Hardware Solution to provide medical Information at points of care, Project Duration: 5 years (2000 - 2005), Hamad Medical, Qatar.
- Medical Commissioning and Fitness Certification, Project Duration: 1 year (2002 - 2003), Ministry of Public Health, Qatar.
- Interfacing E-Government with E-Health and National Health Data Base, Duration: 2 years (2003 - 2005), Ministry of Public Health, Qatar.

- Applying Associative Memory Structures to Identify Auto-Parts Pattern Failure, Duration: 1 year (1999 – 2000), Total Budget: \$3 million, Ford Motor Company, USA.
- NGram Technology for Data Mining, Duration: 1 year (1999 – 2000), Total Budget: \$1.2 million, Triada, USA.
- K-Mart's Y2K, Duration: 2 years (1997 – 1999), Total Budget: \$2.5 million, K-Mart/ Information Builders, USA.
- Planning & Developing Health Information and DSS Systems, Duration: 3 years (1995 – 1998), Total Budget: \$5 million, Henry Ford Health Systems, USA.
- Professional Services Methodology & Guidelines, Duration: 1 year (1996 – 1997), Total Budget: \$1 million, Information Builders, USA.
- CRM, Enrollment & Eligibility, Document Manager and Billing, Duration: 3 years (1993 – 1995), Total Budget: \$4.2 million, Metlife, USA.
- SLC3: Systems Lifecycle 3, Duration: 1 year (1992 – 1993), Total Budget: \$1 million, Electronic Data Systems, USA.

7. Academic Experience

Judged by many standards, my teaching record is considered outstanding. I have taught a variety of subjects at the undergraduate and postgraduate levels, small classes (less than 10 students) and large ones (more than 200 students), supervised a number of graduate and Honors students, many of whom now occupy senior positions in the USA and Middle East. I have initiated, planned, introduced and developed many courses in various universities. I believe that my teaching approach, methodology and style are all geared towards simplifying the subject matter of the relevant course and achieving maximum understanding while maintaining academic rigor. The results of my teaching evaluation in various universities suggest excellent teaching performance, for both small and large classes. The quality of my teaching is evident from the fact that I maintained an overall excellent evaluation for the classes I taught at Wayne State University and University of Jordan.

8/2018 – 2020

Principal Research Professor, KINDI Center for Computing Research,
Qatar University

2005 – Present

Computer Science Department, King Abdulla II School for Information Technology (KASIT), Jordan University.

Professor: January 2012 - Present

Dean - King Abdulla II School for Information Technology, 2016-2017

Associate Professor: 2008 – 2012

Assistant Professor: 1995- 2008.

Undergraduate Courses: Analysis of Algorithms, Image Processing, Programming Languages Design & Implementation, and Database Management Systems, Project Management.

Graduate Courses: Advanced Analysis of Algorithms (M.Sc. & Ph.D.), Databases (M.Sc. & Ph.D.) and Digital Image Processing (M.Sc. & Ph.D.), Information Visualization (Ph.D.).

Supervision: Currently supervising five Ph.D. students.

Most Recent Ph.D. Dissertations and M.Sc. Theses Supervision (selected):

- Eshraq Bani Salama, A Clustering Approach for Reconstructing Cross-Cut Shredded Documents.
- Esam Nsour, An Improved Node Splitting Algorithm in R-tree.
- Shorouq Sabbah, Indexing Spatio-Temporal Databases.
- Sawsan AbuSharkh, Enhancing Modularity-based Graph Clustering Algorithm.
- Afaf Tareef, Improving the Robustness of Image Watermarking Against Attack.
- Mariam AlSharif, Evaluation of Automatic Human Identification Algorithms Using Facial Features.

- Moath Hajaya, Spoken Language processing for Video Archives of Lectures, 2010.
- Yagoub Masaad, Performance Evaluation of Transmission Power Control (TCP) in Mobile Wireless Ad Hoc Networks.
- Khitam Jbara, Knowledge Discovery In Al-Hadith Using Text Classification Algorithm.
- Rahmah Jabay, Object Recantation Based on Dominant points Identification.
- Rabab AbuHirra, Lower- Face verification using Adaptive Correlation Fiter.
- Nashwan Rumaima, A Technique for Temporal DBMS Implementation as a stream on Top of an existing non-temporal DBMS.
- Inas Abuqadoom, Automated Real locator of Replicas Over Mobile Ad HOC Networks.
- Oraib Miqdadi, A spatial data structure for tracking mobile and fixed nodes.
- Ruba Soab, Secure Partially Spatial Disjoint Multi path Routing Protocol Over MANTEs.
- Inas Juma'a, Detecting Fuzzy Duplicates in Datasets.
- Kamal AbuHassan, An Algorithmic Approach for Detecting Matrix Containment.
- Ala'a Baara, Applying Text Mining Algorithms for Knowledge discovery on the Holy Quran Text.
- Saleh Saloos, Efficient Processing of Database Join Based on Matrix Containment.
- Loai Nemir, A Histogram Based Speaker Identification Technique.

2007 – 2009 Director of the Computer Center and University Teaching Hospital

Chairman of the Technical Advisory Committee for all state universities, Junet

Technical Manager of the Unified Admission Committee

Managing staff of more than 150 employees and responsible for planning and executing the information technology strategy for Jordan University including:

- Establishing the information technology canter vision supported with high reliability and availability including power supply, services, communication lines and processing machines.
- Reorganizing the Computer Center staff into a functional organizational chart.
- Planning, budgeting, commissioning, and managing the university network upgrade with QoS, bandwidth management and central control.
- Planning, budgeting, commissioning, and managing the university network security project.
- Planning, budgeting, commissioning, and managing the servers, SAN, and tape library project.

- Commissioning and overseeing the upgrade of the HIS system for the university's teaching hospital.
- Overseeing the email upgrade into Microsoft Exchange project.
- Overseeing the web migration project into Microsoft SharePoint technology including the creation of employee, student, and embassy portals.
- Migrating the student information system into Oracle technology with self-service capabilities.
- Directing the development of the purchasing, inventory control, and fixed assets system.
- Enhancing the laboratories by providing state of the art equipment and qualified staff.

2006 – 2007 Assistant Dean, KASIT, Jordan University.

2000 – 2005 Part-Time Professor, Computer Science Department, Qatar University.

Teaching courses including Management Information Systems, Computer Ethics, Multimedia Systems, Advanced Database Management Systems, Discrete Mathematics and others.

1990 - 1999 Part-Time Professor, Computer Science Department, Wayne State University.

Teaching graduate and undergraduate courses including Database Systems, Expert Systems, Software Engineering, Data Structures, Systems Analysis and Design, and Analysis of Algorithms.

1987 – 1989 Teaching Assistant, Computer Science Department, King Fahad University of Petroleum and Minerals.

Teaching undergraduate courses including Programming in FORTRAN, C and Pascal.

1990 – Pres Misc. Courses:

Project Management, Databases, Data Warehousing and Data Mining, Decision Support Systems, Data Modeling, E-Commerce / E-Business Implementation, and Object-Oriented Design.

8. Industry Experience

2000 – 2005 Hamad Medical/Ministry of Public Health (HMC), Doha, Qatar

Chief Information Officer reporting to the Minister of Public Health and Managing Director.

- Responsible for planning, organizing, staffing, directing and controlling corporate-wide information technology policies to ensure total quality management.
- Developing and executing a strategy for developing hardware and software infrastructure based on high speed networks with wireless capabilities, array of servers with storage area network (SAN), and integrated Eros consisting of Health Information Management Systems (HIMS), Finance, Materials Management and Human Resources software.
- Periodically, presenting to the board of directors the status of IT and progress made to achieve corporate objectives. Participating in helping HMC achieve certification with JCAHO standards.
- Contracting, evaluating, establishing, and negotiated alliances with software and hardware vendors.
- Directing and evaluating corporate quality improvement efforts.
- Developing RFP's and RFI's for several hardware and software solutions.
- Direct supervision for the implementation of comprehensive health information systems as well as management information systems with management responsibility for more than 100 analysts, programmers and trainers.
- Developing and executing the training strategy for staff including physicians, managers, lab/radiology technicians, and nurses.
- Architecting and executing innovative new projects for Medical Records, Ambulatory care, CSSD, Cardiology, Radiology Information System, and Picture Archiving & Communications (PACs) for all facilities resulting in major improvement in services and quality.

1999 – 2000 Triada, Ltd, Ann Arbor, Michigan.

Vice President of Strategic Group & Director of Professional Services

- Defining Triada's strategy in E-Business, Knowledge Discovery and Pattern finding for large databases. Solutions are provided for Ford Motor Company, Compaq, Cisco, State of Michigan, Illinois, and New York State Department.
- Leadership role in creating Triada's patented technology (i.e. NGram) to transform volumes of business records into knowledge in the form of Associative Memory Structures.

1996 – 1999 Information Builders, Troy, Michigan

Regional Manager for the United States Midwest Group

- Responsible for all professional-services activities in the Midwest area – more than 6 states.
- Strategic planning, profit and loss, financial activities, and resource allocation/utilization.

- Technical/management administration, leadership and long-term business planning.
- Developing a professional-services branch in Michigan with a margin profit of 25% and revenue growth of 70% in 1997 and 90% in 1998.
- Developing a team of highly trained professionals of Implementation Managers, Operations Managers, Systems Engineers, and Developers. The team successfully delivered Data Warehousing, Web, ERP, and Y2K solutions to several customers including Henry Ford Health Systems.
- The Midwest Region led the development of Information Builders' Y2K strategy using WALDO and SiteAnalyzer in 1998.
- The Midwest Region led the development of Information Builders' web and e-business solutions using WebFOCUS.

Senior Implementation Manager

Responsibility included:

- Overseeing all projects of Detroit's Professional Services Branch and maintaining relationships with client management.
- Planning and managing the implementation of the Health Management System and DSS for Henry Ford Health Systems.
- Planning and managing the implementation of the Guaranteed Employment Number System for Ford Motor Company (completed April 1997).
- Overseeing the implementation of the Year 2000 project of Prince, Holland and K-Mart.
- Conducting and coordinating presentations for clients illustrating Information Builder's software development / management methodology as System Integrator.
- Leadership role in developing the Information Builders' Professional Services Methodology and Guidelines (PSMG).

1993 - 1996 Senior Technical Manager, MetLife, Southfield, Michigan

Responsibility included:

- Overseeing the client-server unit and making strategic decisions and plans for long-term solutions.
- Writing proposals and conducting presentations.
- Planning and managing the strategic client-server core product of the unit, a full suite consisting of generic Customer Service, Enrollment & Eligibility, Document Manager and Billing. All components were completed before schedule and under budget. The tools recommended for the project were Power Builder, MS SQL Server, MDI, Windows NT, and ERWin.
- Planning and managing MET I&R; an HMO Billing client -server application for MetLife. Also, negotiated and managed the process of linking the system to the mainframes in New York.
- Planning and managing the customization process of the generic Customer Service system for ABB for benefits administration in Hamden, CT.
- Developing, maintaining, and conducting in-house training classes including SQL Server, ERWin, BPWin, PowerBuilder, Database Modeling, and Object-Oriented Design.

1990 - 1993 Project Manager, EPCOM Corporation, Troy, Michigan.

Responsibility included:

- Designing and developing systems under PLEXUS / Informix.
- Providing a set of tools for the creation and operation of image and data processing applications running on client workstations in Windows and communicating over LANs to UNIX based SUN workstation servers using Sybase and FileNet.
- Applying Enterprise Engineering methodologies to re-engineer five departments.
- Teaching classes such as Unix, Client-Server Systems, Object-Oriented Design and Relational Databases for professionals from Ford Motor Company, GM and Chrysler.

Project Manager (Senior SE), EDS, Southfield, Michigan.

Responsibility included:

- Maintaining relationships with client management and development teams.
- Evaluating, recommending and overseeing the implementation of a multi-site financial system across a Wide Area Network over 4 states.

Senior Consultant/Project Manager, Dana Computer Services, Dana Corporation, Toledo, Ohio.

Responsibility included:

- Evaluating the Management Resource Planning (MRP) system for monitoring executive's efficiency running in DOS, RBase, and Pascal.
- Redesigning and developing the MRP system to run in a client/server, Sybase, Power Builder platform.

Senior Consultant/Project Leader, Commonwealth Research Group, Canton, Michigan.

Responsibility included:

- Designing and analyzing a distributed multimedia solution for a Real Estate application.
- Supervising programmers during the coding stage.
- Integrating, QA, and testing the system.

1990 - 1992 Research Associate, Advanced Transmission Design Department, Ford Motor Company, Livonia, Michigan / Wayne State University.

Responsibility included the application of constraint satisfaction techniques in automating the process of designing automatic automobile power transmissions. The basic result was rediscovering two well-known 4R-speed automatic transmissions, Axod and Hydramatic.

1988 - 1990 System Analyst, Information Center, SCECO.

Responsibility included:

- Analyzing, prototyping, and designing a Vehicle Control System.
- Programming systems under IDMS/R on IBM 3090.
- Leading a task force for developing the analysis and design standards and conventions for the information center.
- Participating in the analysis and programming of developing an HR system under DB2.

9. Publications Profile

In Refereed Journals (Selected):

1. **Azzam Sleit**, A Abusitta; An NGram-based Copyright Protection for Digital Images, International Journal of Emerging Multidisciplinaries: Computer Science & Artificial Intelligence, 30-40, 2022.
2. S. Alhazmi, R. Al-Shalalfa, H. Alshareef, **Azzam Sleit**, Al-Akhras M; Efficient Utilization of Mirroring Servers Using Artificial Neural Networks, Journal of Computer Science, 18(1), 42-56, 2022.
3. H. Abdullah, R. Kamel, A. Tahir, **Azzam Sleit**, A. Gastli; The Simultaneous Impact of EV Charging and PV Inverter Reactive Power on the Hosting Distribution System's Performance: A Case Study in Kuwait, *Energies* 2020, 13(17), 4409; <https://doi.org/10.3390/en13174409>.
4. M. Saadeh, **Azzam Sleit**, KE. Sabri, W. Almobaideen; Object authentication in the context of the internet of things: A survey, Journal of Cyber Security and Mobility, 9(3), 2020; <https://doi.org/10.13052/jcsm2245-1439.932>.
5. H. Fakhouri, A. Hudaib, **Azzam Sleit**; Hybrid Particle Swarm Optimization with Sine Cosine Algorithm and Nelder–Mead Simplex for Solving Engineering Design Problems. *Arab J Sci Eng* 45, 3091–3109 (2020). <https://doi.org/10.1007/s13369-019-04285-9>
6. H. Fakhouri, A. Hudaib, **Azzam Sleit**; Hybrid Particle Swarm Optimization with Science Cosine Algorithm and Mathematical Equations for Enhancing Robot Path Planning. In: Jain, L., Peng, S.L., Alhadidi, B., Pal, S. (eds) Intelligent Computing Paradigm and Cutting-edge Technologies. ICICCT 2019. Learning and Analytics in Intelligent Systems, vol 9. Springer, Cham. https://doi.org/10.1007/978-3-030-38501-9_23
7. R. Barham, A. Sharieh, **Azzam Sleit**; Multi-moth flame optimization for solving the link prediction problem in complex networks. *Evol. Intel.* 12, 563–591 (2019). <https://doi.org/10.1007/s12065-019-00257-y>
8. A. Salem, A. Sharieh, **Azzam Sleit**, Riad Jabri; Enhanced authentication system performance based on keystroke dynamics using classification algorithms, *KSII Transactions on Internet and Information Systems*, 13(8), 4076-4092, 2019.
9. H. Fakhouri, A. Hudaib, **Azzam Sleit**; Multivector particle swarm optimization algorithm. *Soft Comput* 24, 11695–11713 (2020). <https://doi.org/10.1007/s00500-019-04631-x>
10. R. Barham, R. Shawqi, A. Sharieh, **Azzam Sleit**; A meta-heuristic framework based on clustering and preprocessed datasets for solving the link prediction problem, *Journal of Information Science*, 2019.
11. S. Awawdeh, A. Edinat, **Azzam Sleit**; An Enhanced K-means Clustering Algorithm for Multi-attributes Data, *The International Journal of Computer Science and Information Security (IJCSIS)*, 17(2), 2019.
12. H. Alsawalqah, Y. Alshamaileh, B. Alshboul, A. Shorman,; **Azzam Sleit**; Azzam; Factors Impacting on CMMI Acceptance Among Software Development Firms: A Qualitative Assessment, *Modern Applied Science*, 13(2), 170-178, 2019.
13. Reham Barham, Ahmad Sharieh, **Azzam Sleit**, Moth Flame Optimization Based on Golden Section Search and its Application for Link Prediction Problem, *Modern Applied Science*, 13(1), 10-27, 2019.

14. M. Eshtay, **Azzam Sleit**, M. Aldwairi; IMPLEMENTING BI-TEMPORAL PROPERTIES INTO VARIOUS NOSQL DATABASE CATEGORIES, 18(1), 45-52, 2019.
15. Reham Shawqi Barham, Ahmad Sharieh, **Azzam Sleit**, A meta-heuristic framework based on clustering and preprocessed datasets for solving the link prediction problem, Journal of Information Science, 2019.
16. Alia Madai, Abdel Latif Abu Dalhoum, **Azzam Sleit**, Application of local rules and cellular automata in representing protein translation and enhancing protein folding approximation, Progress in Artificial Intelligence, Springer, Vol. 7, 2018.
17. A Al-Nsour, **Azzam Sleit**, M Alshraideh (2018), Evaluating Various Quality Factors for Splitting Nodes in Tree-Structured Spatial Indices, International Journal of Computer Applications, 180(29), pp. 49-55.
18. Saad Al-Azzam, Ahmad Sharieh and **Azzam Sleit**, N Al-Azzam, Securing robot communication using packet encryption distribution, Network Security - Elsevier, 2018(2): 8-14.
19. M. Saadeh, **Azzam Sleit**, K Sabri, W. Almobaideen, (2018), Lightweight identity based signature for mobile object authentication in the internet of things, Journal of Theoretical and Applied Information Technology 96(3):788-798.
20. A. Salem, **Azzam Sleit** (2018), Analysis of Ant Colony Optimization Algorithm solutions for Travelling Salesman Problem, International Journal of Scientific & Engineering Research, 9(2), 570-575.
21. Mohammed Eshtay, Rizik Alsayyed, **Azzam Sleit** (2017), Towards General and Comprehensive Definition of Visualization and Visualization Pipeline, Asian Journal of Information Technology, 16(6):527-535.
22. A Al-Shaikh, R Al-Sayyed, **Azzam Sleit** (2017), A CASE STUDY FOR EVALUATING FACEBOOK PAGES WITH RESPECT TO ARAB MAINSTREAM NEWS MEDIA, Jordanian Journal of Computers and Information Technology (JJCIT), 3(3), 142-156.
23. M. Khanafseh, O. Surakhi, A. Sharieh, **Azzam Sleit** (2017), A Comparison between Chemical Reaction Optimization and Genetic Algorithms for Max Flow Problem, IJACSA- International Journal of Advanced Computer Science and Applications, 8(8) 8-15.
24. Raja Masadeh, Ahmad Sharieh, **Azzam Sleit** (2017), Grey wolf optimization applied to the maximum flow problem, International Journal of Advanced and Applied Sciences, 4(7), 95-100.
25. **Azzam Sleit**, M Saadeh, W Al Mobaideen (2016), An Edge Detection Technique for Grayscale Images Based on Fuzzy Logic, British Journal of Applied Science & Technology, 17 (6), 1-13, (IF: 0.19).
26. A Madain, ALA Dalhoum, **Azzam Sleit** (2016), Protein Folding in the Two-dimensional Hydrophobic Polar Model based on Cellular Automata and Local Rules, International Journal of Computer Science and Network Security (IJCSNS), 16(9), 48-54 (IF: 1.44).
27. A Shaheen, **Azzam Sleit** (2016), Comparing between different approaches to solve the 0/1 Knapsack problem, IJCSNS International Journal of Computer Science and Network Security, 16(7), 1-10 (IF: 1.44).
28. A Madain, AL Abu Dalhoum, **Azzam Sleit** (2016), Computational Modeling of Proteins based on Cellular Automata, (IJACSA) International Journal of Advanced Computer Science and Applications, 7(7), 491-498, (IF: 1.44).

29. NS Al-Anbaki, **Azzam Sleit**, A Sharieh (2016), Stable Beneficial Group Activity Formation, International Journal of Advanced Computer Science and Applications, 7(6), 364-368, (IF: 1.324).

30. A.S. Omayya Murad, **Azzam Sleit** (2016), Improving Friends Matching in Social Networks Using Graph Coloring, International Journal of Computers & Technology, 15(8), 7028-7034, (IF: 1.431).

31. HK Ala'a Al-Shaikh, A Sharieh, **Azzam Sleit** (2016), Resource Utilization in Cloud Computing as an Optimization Problem, (IJACSA) International Journal of Advanced Computer Science and Applications, 7(6), 336-342, (IF: 1.324).

32. R Barham, A Sharieh, **Azzam Sleit** (2016), Chemical Reaction Optimization for Max Flow Problem, (IJACSA) International Journal of Advanced Computer Science and Applications, 7(8), 189-196, (IF: 1.324).

33. M Freaj, Azzam Sleit (2016), Hybrid Approach for Resource Provisioning in Cloud Computing, Journal of Information Sciences and Computing Technologies (JISCT), 6(1), 546-561, (IF: 0.914).

34. M Al Sukar, **Azzam Sleit**, A Abu-Dalhoun, B Al-Kasasbeh (2016), Identifying a Drug Addict Person Using Artificial Neural Networks, International Journal of Computer, Electrical, Automation, Control and Information Engineering, 10(3), 589-594.

35. M Eshtay, A Sleit, A Sharieh (2016), NMVSA Greedy Solution for Vertex Cover Problem, (IJACSA) International Journal of Advanced Computer Science and Applications, 7(3), 60-64, (IF: 1.324).

36. R Jobay, **Azzam Sleit** (2014), Quantum inspired shape representation for content based image retrieval, Journal of Signal and Information Processing 5 (02), 54-62, , (IF: 0.98)..

37. **Azzam Sleit**, E Al-Nsour (2014), Corner-based splitting: An improved node splitting algorithm for R-tree, Journal of Information Science 40 (2), 222-236, (IF: 0.878).

38. I Abuqaddom, **Azzam Sleit**, W Almobaideen (2014), Automated Re-allocator of Replicas Over Mobile Ad Hoc Networks, International Journal of Computer Networks & Communications, 6 (1), (IF: 1.3).

39. **Azzam Sleit**, N Misk, F Badwan, T Khalil, Cloud Computing Challenges with Emphasis on Amazon EC2 and Windows AZURE, International Journal of Computer Networks and Communications 5 (5), 2013, pp. 35-44, (IF: 1.3).

40. **Azzam Sleit**, Y. Massad, M. Musaddaq (2013), An alternative Clustering Approach for Reconstructing Cross Cut Shredded Text Documents, Telecommunication Systems Journal, Springer, DOI: 10.1007/s11235-011-9626-x, Vol. 52, pp. 1491-1501, (IF: 1.45).

41. W. Almobaideen, D. Al-Khateeb, **Azzam Sleit**, M. Qatawneh, Improved Stability Based Partially Disjoint AOMDV, International Journal of Communications, Network and System Sciences, vol. 6, 2013, pp. 244-250, (IF: 0.81).

42. W Almobaideen, R Al-Soub, **Azzam Sleit**(2013), MSDM: Maximally Spatial Disjoint Multipath Routing Protocol for MANET, Communications and Network Journal, Vol. 5, pp. 316-322, (IF: 0.33) .

43. O. Adwan, **Azzam Sleit**, M. Qatawneh, Implementing a Total Healthcare Enterprise Resource Planning System, International journal on information, 16(6(b)), 2013, pp. 3997-4004.

44. B. Hammo, **Azzam Sleit**, A. Baarah, H. Abu-Salem (2012), A Computational Approach for Identifying Quranic Themes, International Journal of Computer Processing Of Languages, 24(2), 189–206, DOI: 10.1142/S1793840612400120.

45. M. Qatawneh, Y. Massad, M. Musaddaq, **Azzam Sleit**, A Uniform Noise Median Filter Based on a New Type of Filtering Window, Information Journal, Vol. 15, No. 12, 2012, pp. 699-706.

46. **Azzam Sleit**, S. Abusharkh, R. Etoom, Y. Khero, An Enhanced Semi-Blind DWT-SVD-Based Watermarking Technique for Digital Images, The Imaging Science Journal, Maney Publishing - UK, DOI: 10.1179/1743131X11Y.0000000010, Vol. 60, No. 1, 2012, pp. 29-38, (IF: 0.65).

47. B. Mahafzah, **Azzam Sleit**, N. Hamad, E. Ahmad, T. Abu-Kabeer, The OTIS hyper hexa-cell optoelectronic architecture, Computing Journal, Springer, DOI: 10.1007/s00607-011-0177-5, Vol. 94, 2012, pp. 411-432, (IF: 0.872).

48. A Latif Abu Dalhoun, Thaer Kobbay, **Azzam Sleit**, Enhancing QuickSort Algorithm using a Dynamic Pivot Selection Technique, Wulfenia 19 (10), 2012, pp. 543-552.

49. **Azzam Sleit**, A. Abu-Dalhoun, M. Qatawneh, M. Al-Sharief, R. Al-Jabaly, O. Karajeh, Image Clustering using Color, Texture and Shape Features, KSII Transactions on Internet and Information Systems, Vol. 5, No. 1, 2011, pp. 211-227.

50. **Azzam Sleit**, R. Abu-Hurra and W. AlMobaideen, Lower-quarter-based face verification using correlation filter, The Imaging Science Journal, The Royal Photographic Society – Maney Publishing, Vol. 59, No. 1, 2011, pp. 41-48.

51. W. Almobaideen, K. Hushaidan, **Azzam Sleit**, M. Qatawneh, A Cluster-Based Approach for Supporting QoS in Mobile Ad Hoc Networks, International Journal of Digital Content Technology and its Applications, Vol. 5, No. 1, 2011, pp. 1-9.

52. M. AL-Akhras, I. ALMomani, **Azzam Sleit**, An Improved E-Model Using Artificial Neural Network VoIP Quality Predictor, Neural Network World Journal, Vol. 21, No. 1, 2011, pp. 3-26.

53. H. Al-Hasan, M. Qatawneh, **Azzam Sleit**, W. Almobaideen, EAPHRN: Energy-Aware PEGASIS-Based Hierachal Routing Protocol for Wireless Sensor Networks, Journal of American Science, Vol. 7, No. 8, 2011, pp. 753-758.

54. M. Qatawneh, H. Bdour, S. Sabah, R. Samhan, **Azzam Sleit**, J. Alqatawna, W. al-Mobaideen, An Alternative Routing Algorithm for Hex-Cell Network, Information Journal, Vol. 14, No. 10, 2011, pp. 3499-3514.

55. M. Qatawneh, **Azzam Sleit**, M. Al-Zoubi, A. Fetyani, S. Al-Sharaeh, An Efficient Generalized Multi-Fault Tolerant Mapping Algorithm onto a 3-D Torus Interconnection Topology, World Applied Sciences Journal, IDOSI Publications, Vol. 12, No. 1, 2011, pp. 106-113.

56. **Azzam Sleit**, Chapter 17-Watermarking: Software & Hardware Implementation Techniques, Computational Techniques and Algorithms for Image Processing Edited By: S. Ramakrishnan (ISBN: 978-3-8433-5802-6), Lambert Academic Publishing (LAP), Germany, 2010, pp. 535-552.

57. **Azzam Sleit**, S. Al-Adaileh, N. Al-Omari, H. Hurani, Extending the Cluster Map Algorithm Using Automated Cluster Identifier, International Journal of

Computers and Applications (ISSN: 1206-212X), Acta press, DOI: 10.2316/Journal.202.2010.2.202-2790, Vol. 32, No. 2, 2010.

58. **Azzam Sleit**, A. Abu-Areda, H. Al-Hasan, Shape Approximation using Circular Grids, Transaction on Information Science & Applications Journal, Vol. 7, No. 4, April 2010, pp. 542-550.

59. **Azzam Sleit**, S. Abusharkh and W. AlMobaideen, Enhancing Modularity-Based Graph Clustering, World Applied Sciences Journal, Vol. 9, No. 9, 2010, pp. 984-996.

60. **Azzam Sleit**, H. Saadeh, I. Al-Dhamari, A. Tareef, An Enhanced Sub image Matching Algorithm for Binary Images, Recent Advances in Applied Mathematics, Harvard University, Cambridge, USA, 2010, pp. 565-569.

61. **Azzam Sleit**, A. Abu Dalhoum, I. Al-Dhamari, A. Tareef, An Edge Detection Algorithm for Online Image Analysis, Recent Advances in Applied Mathematics, Harvard University, Cambridge, USA, 2010, pp. 250-254.

62. M. Alshraideh, M. Qatawneh, W. Al Mobaiden, **Azzam Sleit**, Program-Operators to Improve Test Data Generation Search, Transactions on Computers, Vol. 9, No. 8, 2010, pp. 799-811.

63. **Azzam Sleit**, M. Hajaya, F. Obisat, Video PowerSearcher: A Text-Based Indexing E-Learning System, in proceedings of the International Conference on Intelligent Semantic Web Services and Applications, ACM, Isra University, Amman, Jordan, 2010, pp. 170-174.

64. M. Qatawneh, B. Hamed, W. AlMobaideen, **Azzam Sleit**, A. Oudat, W. Qutechat, R. Al-Soub, FTRH: Fault Tolerance Routing Algorithm for Hex-Cell Networks, IJCSNS International Journal of Computer Science and Network Security, Vol.9, No. 12, 2009, pp. 268-274.

65. Fawaz A. M. Masoud, M. Qatawneh, W. Almobaideen, **Azzam Sleit**, A. Hudaib, M. Alshraideh, N. Abu Hashish, O. Megdady, S. Al-Asir (2009), Interactive RPC Binding Model, European Journal of Scientific Research, 27(1), 112-119, ISSN 1450-216X.

66. **Azzam Sleit**, M. Al-Akhras, I. Juma, M. Alian, Applying Ordinal Association Rules for Cleansing Data with Missing Values, Journal of American Science (ISSN: 1545-1003), Vol. 5, No. 3, 2009, pp. 52-62.

67. M. Qatawneh, **Azzam Sleit**, W. AlMobaideen, Parallel Implementation of Polygon Clipping using Transputer, American Journal of Applied Sciences (ISSN: 1546 - 9239), Vol. 6, No. 2, 2009, pp. 214 – 218.

68. **Azzam Sleit**, Wesam Almobaideen, M. Qatawneh, A. Barakat, H. Saadeh, A Query Answering Surveillance System for Detecting and Tracking Moving Objects using Boundary Rectangles, Journal of Digital Information Management, (ISSN: 0972-7272), Vol. 7, No. 1, February 2009, pp. 16-21.

69. **Azzam Sleit**, On Using B⁺-Tree, for Efficient Processing for the Boundary Neighborhood Problem, Transactions on Systems (ISSN: 1109-2777), Vol. 7, No. 7, July 2008, pp. 711-720.

70. A. Sharieh, M. Qatawneh, W. AlMobaideen, **Azzam Sleit**, Hex-Cell: Modeling, Topological Properties and Routing Algorithm, European Journal of Scientific Research (ISSN: 1450 - 216X), Vol. 22, No. 2, 2008, pp. 457-468.

71. M. B. Al-Zoubi, I. Salah, **Azzam Sleit**, S. Al-Sharaeh, A. Huneiti, N. Obeed, Efficient Processing for Assigning Students to Proper Groups, European Journal of Scientific Research (ISSN: 1450 - 216X), Vol. 21, No. 3, 2008.

72. **Azzam Sleit**, W. AlMobaideen, M. Qatawneh, H. Saadeh, Efficient Processing for Binary Submatrix Matching, American Journal of Applied Sciences (ISSN: 1546 - 9239), Vol. 6, No. 1, 2009, pp. 78 – 88.

73. M. Qatawneh, W. AlMobaideen, **Azzam Sleit**, E. Qadduora, O. Meqdady, S. Al-Asir, PRF: Priority-Based Fragments Retransmission for IEEE 802.11 Ad-Hoc Wireless Networks, European Journal of Scientific Research (ISSN: 1450 - 216X), Vol. 20, No. 1, 2008, pp. 14-23.

74. **Azzam Sleit**, W. Almobaideen, M. Qatawneh, S. Al-Asir, O. Al-Megdadi, Recognizing Objects by Detecting Multiple Moving Parts, The Journal of American Science (ISSN: 1545-1003), Vol. 4, No. 4, 2008, pp. 32 – 43.

75. **Azzam Sleit**, W. Al-Mbaideen, N. Alzabin, H. Dawood, K. Alqarute, Efficient Query Processing over Mirror Servers using Genetic Algorithms, Neural Network World (ISSN: 1210-0552), Vol. 17, No. 7, 2007, pp. 311-320.

76. W. Almobaideen, M. Qatawneh, **Azzam Sleit**, I. Salah, S. Al-Sharaeh, Efficient Mapping Scheme of Ring Topology onto Tree-Hypercubes, Journal of Applied Sciences (ISSN: 1812-5654), Vol. 7, No. 18, 2007, pp. 2666-2670.

77. **Azzam Sleit**, W. AlMobaideen, S. AlAreqi, and A. Yahya, A Dynamic Object Fragmentation and Replication algorithm in Distributed Database Systems, American Journal of Applied Sciences (ISSN: 1546-9239), USA, Science Publications, Vol. 4, No. 8, 2007, pp. 613-618.

78. **Azzam Sleit**, and A. Abusitta, A Visual Cryptography Based Watermark Technology for Individual and Group Images, Journal of Systemics, Cybernetics and Informatics (ISSN: 1690-4524), Vol. 5, No. 2, 2007, pp. 24-32.

79. **Azzam Sleit**, W. AlMobaideen, A. Baarah, and A. Abusitta, An Efficient Pattern Matching Algorithm, Journal of Applied Sciences (ISSN: 1812-5654), Vol. 7, No. 9, 2007.

80. **Azzam Ibrahim**, F. Fotouhi, and S. Hasan, The SB⁺-Tree: An Efficient Index Structure for Joining Spatial Relations, International Journal of Geographical Information Science (ISSN: 1365-8816), Taylor & Francis, United Kingdom, Vol. 11, No. 2, 1997, pp. 163-182.

81. **Azzam Ibrahim** and F. Fotouhi, “Indexing and Retrieving Point and Region Objects,” SPIE Electronic Imaging, USA, February 1996, pp. 321-336.

In Conference Proceedings:

1. A Krajah, Y Almadani, H. Saadeh, **Azzam Sleit**; Analyzing Covid-19 Data Using Various Algorithms, 2021 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT).
2. I. Kassem, **Azzam Sleit**; Elapsed Time of IoT Application Protocol for ECG: A Comparison Study Between CoAP and MQTT, 2020 International Conference on Electrical, Communication and Computer Engineering, IEEE, 2020.
3. E. Al-Nsour, **Azzam Sleit**, M. Alshraideh; A Pictorial Performance Comparison of Spatial Indexes, 2020 11th International Conference on Information and Communication Systems (ICICS), DOI: 10.1109/ICICS49469.2020.9239554.
4. **Azzam Sleit**, Noora Fetais, Watermarking: A Review of Software and Hardware Techniques, 2018 International Conference on Computational Science and Computational Intelligence (CSC), Las Vegas, USA.
5. A Al-Nsour, **Azzam Sleit**, M Alshraideh (2017), R-tree node-splitting algorithm using combined quality factors and weights, 2017 International Conference on Computational Intelligence, IEEE, Las Vegas, DOI: 10.1109/CSCI.2017.251, 1437-1442.
6. M. Kadhum, M. Qasem, **Azzam Sleit**, A. Sharieh (2017) Efficient MapReduce Matrix Multiplication with Optimized Mapper Set, International Journal of Advanced and Applied Sciences, vol. 574, DOI: 10.1007/978-3-319-57264-2_19, Springer, 186-196.
7. **Azzam Sleit**, M Saadeh, W AlMobaideen (2016), A Two-Phase Fuzzy System for Edge Detection, Int'l Conf. IP, Comp. Vision, and Pattern Recognition, IPCV'16, 376-382.
8. M Saadeh, **Azzam Sleit**, M Qatawneh, W Almobaideen (2016), Authentication Techniques for the Internet of Things: A Survey, 2016 Cybersecurity and Cyberforensics Conference, IEEE, 28-34.
9. O. Adwan, Aiman Ayyal Awwad, **Azzam Sleit**, A. Abu Dalhoum (2011), A novel watermarking scheme based on two dimensional cellular automata, Proceedings of the International Conference on Computers and Computing, World Scientific and Engineering Academy and Society (WSEAS). Canary Islands, Spain, 88-94.
10. **Azzam Sleit**, A. Abu-Dalhoum, I. Al-Dhamari, A. Awwad, Efficient enhancement on cellular automata for data mining, Proceedings of the 13th WSEAS International Conference on Systems, 2009, pp. 616-620.
11. **Azzam Sleit**, I. Salah, R. Jabay, Approximating Images using Minimum Bounding Rectangles, in Proceedings of the IEEE First International Conference on the Applications of Digital Information and Web Technologies – ICADIWT (ISBN: 978-1-4244-2624-9), Czech Republic, 2008, pp. 394 - 396.
12. **Azzam Sleit**, S. Serhan, L. Nemir, A Histogram Based Speaker Identification Technique, in Proceedings of the IEEE First International Conference on the Applications of Digital Information and Web Technologies – ICADIWT (ISBN: 978-1-4244-2624-9), Czech Republic, 2008, pp. 384 – 388.
13. **Azzam Sleit**, W. AlMobaideen, M. Smadi, M. Qatawneh, JCAM: The Joined Clustered Access Method, in Proceedings of the IEEE First International

Conference on the Applications of Digital Information and Web Technologies – ICADIWT (ISBN: 978-1-4244-2624-9), Czech Republic, 2008, pp. 281 - 288.

14. B. Hammo, **Azzam Sleit**, M. El-Haj, Enhancing Retrieval Effectiveness of Diacritized Arabic Passages using Stemmer and Thesaurus, in proceedings of the Nineteenth Midwest Artificial Intelligence and Cognitive Science Conference - MAICS, Cincinnati, Ohio, April 2008, pp. 189 – 196.
15. B. Hammo, **Azzam Sleit**, and M. AlHajj, Effectiveness of Query Expansion in Searching the Holy Quran, L'institut organise le 2ème colloque international sur le Traitement Automatique de la Langue Arabe, CITALA 2007.
16. **Azzam Sleit**, W. AlMobaideen, N. Alzabin, H. Dawood, and K. Alqarute, "A Genetic Algorithm for Distributed Query Processing over Mirror Servers, in proceedings of the 1st International Conference on Digital Communications & Computer Applications, Jordan, 2007, pp. 81-87.
17. **Azzam Sleit** (previously Azzam Ibrahim), Enhancing The Performance of Data Warehouses through Data Staging, in proceedings of the 4th International Multiconference on Computer Science and Information Technology - CSIT 2006, Amman, Jordan, Vol. 2, 2006, pp. 41 – 48.
18. **Azzam Sleit** (previously Azzam Ibrahim) and A. Abu-Sitta, Advanced Digital Image Copyright Protection Scheme Based on Visual Cryptography, in proceedings of the 4th International Multiconference on Computer Science and Information Technology - CSIT 2006, Amman, Jordan, Vol. 1, 2006, pp. 365 - 375.
19. **Azzam Sleit** (previously Azzam Ibrahim) and A. Abu-Sitta, A Watermark Technology Based on Visual Cryptography, in proceedings of the Tenth Conference of Systemics, Cybernetics and Informatics - WMSCI 2006, Orlando, Florida, July 2006.
20. **Azzam Sleit** (previously Azzam Ibrahim) and R. O. Jabay, A Chain Code Approach for Recognizing Basic Shapes, in proceedings of the 4th International Multiconference on Computer Science and Information Technology - CSIT 2006, Vol. 2, pp. 298 – 302, 2006.
21. **Azzam Ibrahim**, F. Fotouhi, and A. Al-Badarneh, Efficient Processing of Spatial Selection and Join Operations Using SB⁺-Tree, in proceedings of the International Database Engineering and Applications Symposium, Montreal, Canada, 1997.
22. **Azzam Ibrahim**, F. Fotouhi, and A. Al-Badarneh, Efficient Processing of Direction Operations in Spatial Databases, in proceedings of IASTED'98: International Conference of Computer Systems and Applications, 1998.
23. **Azzam Ibrahim**, and M.G. Khayat, A Software Conceptual Complexity Measure, in proceedings of the 14th IASTED International Conference, Innsbruck, Austria 1996.
24. **Azzam Ibrahim**, and F. Fotouhi Efficient Processing of Spatial Selection and Join in Databases, in proceedings of the 14th IASTED International Conference, Innsbruck, Austria 1996.
25. **Azzam Ibrahim**, and F. Fotouhi, Best-Match and Exact-Match Indexing in Hypertext, in proceedings of the 13th IASTED International Conference, Innsbruck, Austria 1995.

26. **Azzam Ibrahim**, M.G. Khayat, A Control-Construct Based Software Complexity Measure, In proceedings of the 13th IASTED International Conference, Innsbruck, Austria 1995.

Additional Corporate Research

- “Corporate Memory and Pattern Finder”, Triada, February 2000.
- “SDM: System Development Methodology”, Information Builders, May 1997
- “PMG: Project Management Guidelines”, Information Builders, Version 2.0, July 1998 (170 pages).
- “PMG: Project Management Guidelines”, Information Builders, Version 1.0, October 1997 (100 pages).
- “Data Warehousing and Data Mining Implementation Issues and Techniques”, Top Gun, Cancun, Mexico, Information Builders, December 1996.