

CURRICULUM VITAE

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Nashat Mansour

Computer Science

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Research Interests

Metaheuristics and Data Mining: application to real-world problems; timetabling.

Biomedical Informatics: protein structure prediction; gene-disease association;
clinical decision support systems.

Software Engineering: search-based software engineering; software testing.

Education

Bachelor of Engineering	School of Electrical Engg.	University of New South Wales	1980
Master of Engineering Science	School of Electrical Engg.	University of New South Wales	1983
Master of Science (Computer Eng.)	Department of Electrical and Computer Engg.	Syracuse University	1990
Doctor of Philosophy	School of Computer Science	Syracuse University	1992

Employment

Organization	Period	Position
University of N.S.W.	81-83	Teaching Assistant in Elect. Engg. (Full-time)
TELECOM Australia	84-85	Telecommunications Engineer
American Univ. of Beirut	85-87	Instructor of Computer Engineering (Part-time)
Beirut University College	85-86	Instructor of Computer Science (Part-time)
Beirut University College	86-88	Instructor of Computer Science
Lebanese-American University	92-97	Assistant Professor of Computer Science
Lebanese-American University	97-2005	Associate Professor of Computer Science
Lebanese-American University	2005+	Professor of Computer Science

Scholarships and Research Grants

- Fulbright Scholarship: August 88 - May 89, Department of Electrical and Computer Engineering, Syracuse University.
- Visiting Researcher Grant: Department of Electrical and Computer Engineering, Syracuse University. Project: Software Regression Testing, Summer 1993, Collaboration with Prof. Amrit Goel.
- Research Grant: National Council for Scientific Research, Lebanon. Project: "Reducing the Cost of the Maintenance Phase of Software Development", 1994 and 1995.
- Visiting Researcher Grant: Brethen Institute of Operations Management, Syracuse University. Project: Genetic Algorithms for Management Applications, Summer 1997, Collaboration with Prof. Fred Easton.
- Research Grant: National Council for Scientific Research, Lebanon. Project: "A New Method for Regrouping Service Sites", 1998-1999 and 1999-2000.
- Research Grant: National Council for Scientific Research, Lebanon. Project: "Software Quality for Small Software Organizations", 2001-2002.
- Research Grant: National Council for Scientific Research, Lebanon. Project: "Evolutionary algorithm for university exam scheduling", 2007.
- Research Grant: National Council for Scientific Research, Lebanon. Project: "Computational methods for protein structure prediction", 2008-2010.
- Research Grant: National Council for Scientific Research, Lebanon. Project: "Computational evaluation of protein energy functions", 2011-2013.

Publications

Refereed Journal Papers

- Allocating data to multicomputer nodes by physical optimization algorithms for loosely synchronous computations. *Concurrency: Practice and Experience*, 4(7), 1992, 557-574. (with G. Fox)
- Parallel physical optimization algorithms for allocating data to multicomputer nodes. *The Journal of Supercomputing*, No. 8, August 1994, 53-80. (with G. Fox)
- Allocating data to distributed-memory multiprocessors by genetic algorithms. *Concurrency: Practice and Experience*, 6(6), Sept. 1994, 485-504. (with G. Fox)
- Graph contraction for mapping data on parallel computers: a quality-cost tradeoff. *J. Scientific Programming*, Vol. 3, 1994, 73-82. (with R. Ponnusamy, A. Choudhary, G. Fox)
- A comparison of optimization heuristics for the data mapping problem. *Concurrency: Practice and Experience*, 9(5), 1997, 319-344. (with N. Chrisochoides and G. Fox)
- Properties of simulated annealing and genetic algorithms for mapping data to multicomputers. *Journal of Parallel Algorithms and Applications / Int. J. of Parallel, Emergent and Distributed Systems*, 12(4), 1997, 279-296. (with J. Kawash and H. Diab)
- Simulated annealing and genetic algorithms for optimal regression testing. *Journal of Software Maintenance and Evolution*, 11(1), Jan-Feb 1999, 19-34. (with K. Fakhri)
- A distributed genetic algorithm for deterministic and stochastic labor scheduling problems. *European Journal of Operational Research*, Vol. 118, No. 3, November 1999, 505-523. (with F. Easton)
- Simulation of dynamic input buffer space in multistage interconnection networks. *Advances in Engineering Software*, Vol. 31, No. 1, January 2000, 13-24. (with H. Diab and H. Tabbara)
- Stochastic iterative search heuristics for mapping data to multicomputers. *Lebanese Science Journal*, Vol. 1, No. 2, 2000, 71-90.
- Software Metrics for Small Database Applications. *International Journal of Computers and their Applications*, Vol. 8, No. 1, March 2001, 33-41. (with R. Haraty and S. Abiad)
- Empirical comparison of regression test selection algorithms. *Journal of Systems and Software*, Vol. 57, No. 1, April 2001, 79-90. (with R. Bahsoon and G. Baradhi)
- Regression testing of database applications. *Journal of Database Management*, Vol. 13, No. 2, Apr-June 2002, 31-43. (with R. Haraty and B. Daou)
- Reduction-based methods and metrics for selective regression testing. *Information and Software Technology*, Vol. 44, No. 7, 2002, 431-443. (with R. Bahsoon)
- A genetic algorithm approach for regrouping service sites. *Computers and Operations Research Journal*, Vol. 31, 2004, 1317-1333. (with H. Tabbara and T. Dana)
- Data generation for path testing. *Software Quality Journal*, Vol. 12, 2004, 121-136. (with M. Salame)
- SQIMSO: quality improvement for small software organizations. *Journal of Computer Science*, 1(3): 316-322, 2005. (with R. Zeineddine)
- WSDL Mutation for Testing Web Services. *Int. Journal of Computers and Their Applications*, Vol. 12, No. 4, 210-216, 2005. (with Reda Siblini and A. Tarhini)
- Incremental Genetic Algorithm. *International Arab Journal of Information Technology*, Vol. 3, No. 1, 2006, 42-47. (with M. Awad and K. El-Fakhri)
- Weblins: A scalable WWW cluster-based server. *Advances in Engineering Software*, Vol. 37, Issue 1, January 2006, 11-19. (with A. Faour)
- Testing web applications. *Information and Software Technology*, Vol. 48, No. 1, January 2006, 31-42. (with M. Hourri)
- Ripple Effect in Object Oriented Programs. *Journal of Computational Methods in Sciences and Engineering*, Vol. 6, No. 5-6, 2007, 23-32. (with H. Salem)
- Stochastic search algorithms for exam scheduling. *International Journal of Computational Intelligence Research*, Vol. 3, No. 4, Dec. 2007, 353-361. (with M. Timany)
doi:10.5019/j.ijcir.2007.116
- An Auto-Indexing method for Arabic text. Accepted in *Information Processing and Management*, Vol. 44, 2008, 1538-1545. (with R. Haraty, W. Daher, M. Hourri)
- Scatter search algorithm for protein structure prediction. *International Journal of Bioinformatics Research and Applications*, Vol. 5, No. 5, 2009, 501-515. (with C. Kehyayan, H. Khachfe)
- Regression test selection for C# programs. *Advances in Software Engineering*, 2009. (with W. Statieh) doi:10.1155/2009/535708

- Testing and regression testing web services based applications. *International Journal of Computing and Information Technology*, Vol. 2, No. 2, **2010**, 195 – 217. (with A. Tarhini and H. Fouchal)
- Filtering intrusion detection alarms. *Cluster Computing Journal*, Vol. 13, No. 1, **2010**, 19-29 (with M. Shehab, A. Faour) DOI: 10.1007/s10586-009-0096-9
- Ripple effect in web applications. *International Journal of IT and Web Engineering*, Vol. 5, No. 2, **2010** (with N. Baba)
- UML based regression testing for OO software. *Journal of Software Maintenance and Evolution*, Vol. 23, No. 1, 2011, 51-68 (with H. Takkoush, A. Nehme) DOI: 10.1002/smr.508.
- Scatter search technique for exam timetabling. *Applied Intelligence*, Vol. 34, No. 2, **2011**, 299-310 (with V. Isahakian, I. Ghalayini) DOI 10.1007/s10489-009-0196-5
- Improving the Accuracy of English-Arabic Statistical Sentence Alignment. *International Arab Journal on Information Technology*, Vol. 8, No. 2, **2011**, 171-177 (with M. Salameh, R. Zantout, L. Hamandi)
- Parallel Scatter Search algorithms for exam timetabling. *International Journal of Applied Metaheuristic Computing*, Vol. 2, No. 3, **2011**, 27-44 (with Ghia Haidar)
- Particle swarm optimization approach for protein structure prediction in the 3D HP model. *Journal of Interdisciplinary Sciences: Computational Life Sciences*, 4, 1-11, **2012**, Springer (with F. Kanj, H. Khachfe)

Book Chapters, Magazine Articles

- Regression testing of database applications. Book Chapter in “*Readings on Database Management*”, published by Idea Group Publishing in **2004**. (with R. Haraty and B. Daou)
- Mining airline data for CRM strategies. *Communications of the ACS Magazine*, Vol. 1, No. 1, **2008** (with L. Maalouf)
- Enhanced genetic algorithm for protein structure prediction in the 3D HP model. In “*Search Algorithms and Applications*”, InTech Open Access Publisher, pp. 69-78, **2011** (with F. Kanj, H. Khachfe)
- Ab initio Protein Structure Prediction: Methods and Challenges. Book Chapter in *Biological Knowledge Discovery Handbook: Preprocessing, Mining and Postprocessing of Biological Data*, M. Elloumi and A. Y. Zomaya (Eds.), Wiley Book Series on Bioinformatics: Computational Techniques and Engineering, Wiley-Blackwell, John Wiley & Sons Ltd., New Jersey, USA; To Appear in **2012**. (with J. Abbass and J.-C. Nebel)

Book Editing

- “*Search Algorithms and Applications*”, published by InTech Open Access Publisher in 2011.

Refereed Conference Papers

- An evolutionary approach to load balancing parallel computations. Proceedings of *Distributed Memory Computing Conference*, Portland, May 1991, 200-203. (with G. Fox)
- A hybrid genetic algorithm for task allocation in multicomputer. Proceedings of *Int. Conf. on Genetic Algorithms*, San Diego, July 1991, 466-473. (with G. Fox)
- A comparison of load balancing algorithms for parallel computations. Proceedings of *Supercomputing Symposium'92*, Montreal, Canada, June 7-10, 117-127, 1992. (with G. Fox)
- Parallel genetic algorithms with application to load balancing for parallel computing. Proceedings of *Supercomputing Symposium'92*, Montreal, Canada, June 7-10, 128-139, 1992. (with G. Fox)
- Parallel physical optimization algorithms for data mapping. Proceedings of *Int. Joint Conference on Vector and Parallel Processing*. CONPAR'92, Lyon, France, Sept. 1-4, 1992. (with G. Fox)
- Mapping realistic data sets on parallel computers. Proceedings of *Int. Parallel Processing Symposium*, April 1993, 123-128. (with R. Ponnusamy, A. Choudhary, G. Fox)
- A distributed genetic algorithm for employee staffing and scheduling problems. Proceedings of *Int. Conf. on Genetic Algorithms*, July 1993, 360-367. (with F. Easton)
- Graph contraction for physical optimization methods for mapping data on parallel computers.

- Proceedings of *Int. Conf. on Supercomputing*, July 1993, 1-10. (with R. Ponnusamy, A. Choudhary, G. Fox)
- Performance evaluation of load balancing algorithms for parallel single-phase iterative PDE solvers. Proceedings of *Scalable High-Performance Computing Conference*, May 1994. (with N. Chrisochoides and G. Fox)
 - The effect of the number of PEs on the performance of dynamic dataflow computers. Proceedings of *Int. Conf. Parallel and Distributed Computing and Systems*, Washington, D.C., October 18-21, 1995, 407-410, IASTED, ACTA Press. (with H. Diab and H. Tabbara)
 - General applicability of genetic and simulated annealing algorithms for data mapping. Proceedings of *Int. Conf. Parallel and Distributed Computing and Systems*, Washington, D.C., October 18-21, 1995, 225-228, IASTED, ACTA Press. (with J. Kawash and H. Diab)
 - A genetic algorithm for corrective retesting. *Lebanese Scientific Research Reports*, Vol. 1, No. 1, January 1996, 5-19. (with K. Fakih)
 - Natural optimization algorithms for optimal regression testing. Proceedings of *Computer Software and Applications Conference COMPSAC'97*, Washington, D.C., Aug. 13-15, 1997, 511-514, IEEE Press. (with K. Fakih)
 - Mapping data to multicomputers using tabu search. Proceedings of *2nd LAAS Int. Conf. on Computer Simulation*, Beirut, Sept. 1-4, 1997, 123-128. (with K. Diab)
 - A comparative study of five regression testing algorithms. Proceedings of *Software Engineering Conference*, Australia, Sydney, Sep. 29-Oct. 2, 1997, 174-182, IEEE Press. (with G. Baradhi)
 - Natural optimization algorithms for exam scheduling. Proceedings of *IASTED Int. Conf. On Computer Systems and Applications*, March 30 - April 2, 1998, 124-127, ACTA Press. (with A. Tarhini)
 - A decision support system for regrouping public schools. Proceedings of *IASTED Int. Conf. On Computer Systems and Applications*, March 30 - April 2, 1998, 71-73, ACTA Press. (with G. Rishani)
 - Simulated annealing algorithm for path testing. Proceedings of *IASTED Int. Conf. on Software Engineering*, Las Vegas, October 28-31, 1998, 138-141. (with R. Joumaa)
 - Software Metrics for Small Database Applications. Proceedings of the *ACM Symposium on Applied Computing*, Milano, March 19-21, 2000, 866-870. (with S. Abiad and R. Haraty)
 - Integer- and real-value test generation for path coverage using a genetic algorithm. Proceedings of *IASTED Int. Conf. on Software Engineering and Applications*, Las Vegas, November 6-9, 2000, 49-54. (with M. Salame and R. Joumaa)
 - Heuristics for graph decomposition. Proceedings of the *IEEE Int. Conf. on Electronics, Circuits, and Systems*, Kaslik, Lebanon, December 17-20, 2000, 650-653. (with H. Tabbara and T. Dana)
 - Spreadsheet model for Morphosys RC Array. Proceedings of the *IEEE Int. Conf. on Electronics, Circuits, and Systems*, Kaslik, Lebanon, December 17-20, 2000, 66-69. (with H. Diab and E. Abdennour)
 - Regression testing of database applications. Proceedings of the *ACM Symp. on Applied Computing*, Las Vegas, Mar. 2001, 285-289. (with R. Haraty and B. Daou)
 - Methods and metrics for selective regression testing. Proceedings of the *ACS/IEEE Int. Conf. on Computer Systems and Applications*, Beirut, June 26-29, 2001, 463-465. (with R. Bahsoon)
 - Incremental genetic algorithm. *International Conference on Computer Science, Software Engineering, Information Technology, e-Business, and Applications (CSITeA'02)*, June 6-8, 2002, Foz do Iguazu, 24-29. (with M. Awad and K. El-Fakih)
 - An Arabic auto-indexing system for information retrieval. Proceedings of *IASTED Int. Conf. on Applied Informatics*, Innsbruck, Austria, Feb. 10-13, 2003. (with R. Haraty and W. Daher)
 - Comparative Evaluation of Object Request Broker Technologies. Proceedings of the *ACS/IEEE Int. Conf. on Computer Systems and Applications*, Tunis, July 15-18, 2003. (with F. Nammour)
 - Three-phase simulated annealing algorithms for exam scheduling. Proceedings of the *ACS/IEEE Int. Conf. on Computer Systems and Applications*, Tunis, July 15-18, 2003. (with A. Tarhini, and V. Ishakian)
 - Software quality model for small organizations. Proceedings of the *Int. Symp. on Computer and Information Sciences*, Turkey, Nov. 1-3, 2003, 1027-1034. (with R. Zeineddine)
 - SDL modeling for web systems. Proceedings of the *Int. Symp. on Computer and Information Sciences*, Turkey, Nov. 1-3, 2003, 1019-1026. (with J. Syriani)
 - A heuristic algorithm for assigning papers to reviewers. *European Conference on Combinatorial Optimization XVII*, Beirut, June 24-26, 2004. (with D. Baasiri and S. Dandashly)
 - Ripple Effect in Object Oriented Programs. *Int. Conference on Computer Science, Software*

- Engineering, Information Technology, e-Business, and Applications* (CSITeA'04), Cairo, Dec. 2004. (with H. Salem)
- Testing web services. *Proceedings of the ACS/IEEE Int. Conf. on Computer Systems and Applications*, Cairo, Jan. 3-6, 2005. (with R. Siblini)
 - White box testing of web applications. *International Conference on Information Technology*, Amman, May 3-5, 2005. (with M. Hourri)
 - Simple approach to testing web services based applications. *Proceedings of Innovatice Internet Community Systems Conference* (LNCS, Springer), Paris, June 20-22, 2005. (with A. Tarhini, H. Fouchal)
 - Regression testing web services based applications. *ACS/IEEE Int. Conf. on Computer Systems and Applications*, Sharjah, March 8-11, 2006 (with A. Tarhini, H. Fouchal)
 - Allocation and re-allocation of data in a grid using an adaptive genetic algorithm. *ACS/IEEE Int. Conf. on Computer Systems and Applications*, Sharjah, March 8-11, 2006 (with H. Siefoddini, K. El-Fakih, J. Kawash)
 - Evolutionary algorithm for exam scheduling. *Int. Symp. On Innovations in Intelligent Systems and Applications*, Istanbul, June 20-23, 2007, 283-287. (with V. Isahakian)
 - Mining airline data for CRM strategies. *WSEAS Int. Symp. Data Mining and Intelligent Information Processing*, Beijing, Sept. 15-17, 2007. (with L. Maalouf)
 - UML based regression testing for OO software. *IASTED Int. Conf. on Software Engineering and Applications*, Boston, Nov. 19-21, 2007, 96-101. (with H. Takkoush)
 - Growing Hierarchical Self-Organizing Map for Filtering Intrusion Detection Alarms. *Int. Symposium on Parallel Architecture and Networks* (I-SPAN), Sydney, May 7-9, 2008 (with M. Shehab, A. Faour)
 - Evolutionary algorithm for protein structure prediction. *Int. Conf. on Advanced Computer Theory and Engineering* (ICACTE), Dec. 20-22, 2008. (with C. Kehyayan, H. Khachfe)
 - Regression testing web applications. *Int. Conf. on Advanced Computer Theory and Engineering* (ICACTE), Dec. 20-22, 2008. (with A. Tarhini, Z. Ismail)
 - Protein structure prediction in the 3D HP model. *ACS/IEEE Int. Conf. on Computer Systems and Applications*, Rabat, May 10-13, 2009 (with F. Kanj, H. Khachfe, F. Abu Khzam)
 - Parallel metaheuristic for exam timetabling. *Int. Conf. on Natural Computation*, Yantai, Aug 10-12, 2010 (with Ghia Haidar)
 - Evolutionary algorithm for protein structure prediction. *Int. Conf. on Natural Computation*, Yantai, Aug 10-12, 2010 (with F. Kanj, H. Khachfe)
 - Evolutionary Algorithm for Predicting All-Atom Protein Structure. *Int. Conf. on Bioinformatics and Computational Biology*, New Orleans, March 23-25, 2011 (with I. Ghalayini, S. Rizk, M. El-Sibai)
 - Parallel genetic algorithm for disease-gene association. *Int. Conf. on Natural Computation*, Shanghai, July 26-28, 2011 (with A. Mouawad)
 - Optimization metaheuristic for software testing. *EVOLVE 2012 conference*, Mexcio, 7-9 August, 2012. (with H. Zeitunlian, A. Tarhini)