

CURRICULUM VITAE



First Name: Mohamed

Middle Name: Naceur

Last Name: Azaiez

Birth and Place of Birth: March 18th, 1964 at Tunis

Nationality: Tunisian

Marital Status: Married and father of four children

Professional Address: Tunis Business School, El Mourouj 2074, Tunisia

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EDUCATION:

- Ph.D., Industrial Engineering/Operations Research, December 1993.
University of Wisconsin-Madison, Industrial Engineering Department, U.S.A.
Thesis: "Perfect Aggregation in Reliability Models with Bayesian Updating".
- Master of Science, Industrial Engineering/Operations Research, June 1993.
University of Wisconsin-Madison, Industrial Engineering Department.
- Master of Science, Mathematics, June 1990.
University of Wisconsin-Madison, Math Department.
- B. Sc. Mathematics, June 1987.
Faculté des Sciences de Tunis, Université de Tunis II

ACADEMIC EXPERIENCE

- Professor, Tunis Business School, Tunisian High Institute of Management
(Institut Supérieur de Gestion) Tunis University, 2011-present

- Professor at Tunisian High Institute of Management (Institut Supérieur de Gestion) Tunis University, 2010-2011
- Professor King Saud University, IE Dept. 2006-2010
- Associate Professor, 2002- 2006, King Saud University, IE Dept.
- Assistant Professor, 1997-2002, King Saud University, IE Dept.
- Assistant Professor, 1995-97, Ecole Supérieure de Commerce, Sfax, Tunisia.
- Lecturer, 1994-95, Institut Supérieur de Gestion, Tunis, Tunisia
- Research Assistant, September 1990-December 1993.
University of Wisconsin-Madison, Industrial Engineering Department.
- Teaching Assistant, 1st semester, 1989.
University of Wisconsin-Madison, Mathematics Department.

COURSES TOUGHT

- **Undergraduate level**
 - Deterministic operations Research
 - Stochastic Operations Research
 - Mathematical Statistics
 - Decision Theory
 - Game theory
 - Forecasting Methods
 - Cost Analysis
 - Stochastic Processes
 - Reliability Analysis and Maintenance
- **Graduate level**
 - Optimization
 - Advanced Operations Research Topics
 - Decision Theory
 - Maintenance Management

RESEARCH INTEREST

- Applied Operations Research/ Decision Science
- Strategic planning
- Security management
- Reliability and Maintenance Management
- Use of Operations Research in Health-Care Management
- Water Management
- Inventory Management
- Project Management
- Production Planning and Scheduling

RESEARCH PROJECTS

- Long-Term Management of Water Resources in Tunisia (1995-1997), sponsored by ICARDA, grant : \$300, 000
- Multi-Period, Multi-Reservoir Water Management Systems Under Overdrafts (1998-2000), sponsored by the Research Center of the Engineering College of King Saud University, grant # 16/419, amount: 20, 000 SR (Saudi Riyals)
- Algorithms for the Resource-Constrained Project Scheduling Problem (1999-2000), sponsored by the Research Center of the Engineering College of King Saud University, grant # 17/420, amount: 20, 000 SR (Saudi Riyals)

- Development of a Decision Support System for Optimal Irrigation Water Use and Crop Selection (2001/2005), sponsored by KACST, Saudi Arabia, grant # AC-37, amount of grant: 562, 000 SR. [Won Al-Marai National Prize for Research Excellence on Best research project of water conservation of the year 2006.](#)
- Maintenance Policies for Repairable Items, sponsored by SABIC, (2004-2005), amount of the grant 50,000 SR.
- Performance Evaluation of Maintenance Activities at Saudi Industries (2004-2006), Sponsor: Deanship for Scientific Research, amount of the grant 142,000 SR.
- Determination of process parameters with maintenance and quality costs (2004-2006), Sponsor: Deanship for Scientific Research, amount of the grant 50,000 SR.
- Protecting Infrastructure from intelligent threats (2008-2009), Sponsor College of Engineering Research Center, Grant amount 26,000 SR.
- Security staff scheduling at King Faisal Hospital and Research Center, 2010
- Nurse scheduling at King Faisal Hospital and Research Center, 2010
- Development of a computerized nurse scheduling system at King Faisal Hospital and Research Center, 2011.
- Development of Decision Support Systems for the nursing field at Saudi hospitals; 2011-2014. National Project funded by KACST
- Development of an automated scheduling system for physicians at Saudi hospitals; ongoing. National Project funded by KACST

AWARDS

- Al-Marai National Prize for Research Excellence on Best research project of water conservation of the year 2006.
- Scholarship for Graduate studies in the USA, 1987.

SUPERVISION

PhD Thesis

- A multi-attribute approach for performance evaluation of sustainable banks: May 2014
- System survivability under attack: Concept and technical development-ongoing

Master Theses

- System Survivability under Attack- The Discrete Case, July 2014
- A Multi-Objective Model for Nurse Scheduling, October 2001.
- A Preventive Maintenance Model using Opportunity Costs, October 2001.
- Modeling Water Allocation under Deficit Irrigation, October 2004.
- Development of Maintenance Performance Evaluation System for King Abdulaziz Medical City (2007)
- System survivability under attack- the discrete case; on-going
 - BSc. Projects
 About 35 projects supervised in several areas of applied OR.

REFEREEING

- EJOR
- JORS

- Reliability Engineering and System Safety
- Computers & OR
- Risk Analysis
- Production Economics
- IEEE Transactions on Reliability
- The Journal of Quality in Maintenance Engineering,
- CJOR
- Institute for Industrial Engineering.

SHORT COURSES

- Strategic Planning
- Maintenance Planning and Scheduling
- Maintenance shutdown management
- Cost Analysis
- Project Management
- Computerized decision making
- Operations Management
- Spare part management

ACADEMIC ACTIVITIES

- *Consultant for the dean of scientific research at King Saud university (2002-2005)*
 - *Development of a tentative strategic plan for scientific research at King Saud University*
 - *Establishment of a tentative research chair program for the university*
 - *Establishment of a research chair on polymers sponsored by SABIC*
 - *Design and preparation of the international conference on "university-private sector Partnership in research and development", sponsored by King Abdullah Ibn Abdulaziz (crown prince at the time)*
- *Consultant for the director of King Saud Science Park (2005-2007)*
 - *Preparation of a study on installing research incubators and science parks at King Saud University*
 - *Preparation of an executive plan with the collaboration of Dr. Malcolm Parry (international expert and director of Surrey research Park in England) for installing King Saud Science Park (KSSP)*
 - *Starting the preliminary phases of the executive plan*
- *Consultant for the Vice-rector for Knowledge Exchange and Technology Transfer as a director of the strategic studies and development Unit (September 2007-2011)*
 - *Development of the University Research Strategic Plan*
 - *Preparation of a detailed proposal of a development project of KSU to reach excellence including the main elements of the University Strategic Plan*
 - *Development of the Industrial Engineering Department Strategic Plan*
 - *Evaluation and follow-up of the Strategic Plan of the College of Engineering at the University*

- *Development of a proposal for the Ministry of Higher Education on installing a technical University*
- *Development of a fellowship program with International Scholars*
- *Development of an academic award program*
- *Development of a research chair program at KSU*
- *Development of an endowment program at KSU*
- *Creation of an Alumni Association at KSU*
- *Initiation of the project of Riyadh Knowledge Corridor*
- *Development of a ranking system of researchers at KSU*
- *Contributions in the knowledge society initiatives at KSU*

- *Permanent member of the consulting committee of the KSU scientific council*
 - *Development of initiatives related to faculty promotions*
 - *Preparation of a proposal of incentives for research excellence*
 - *Updating of the sabbatical leave policies at KSU*
- *Permanent member of the University committee for promoting graduate studies*
 - *Revisions of the bi-laws of the university graduate studies*
 - *Development of initiatives to improve the programs and outcomes of the graduate studies at KSU*
- *Coordinator of the ABET (**Accreditation Board for Engineering and Technology**) committee at the department and department representative of the college ABET committee*
 - *Preparation of the department vision, mission, objectives, and outcomes*
 - *Preparation of course files including courses outcomes and their connections with ABET expected outcomes*
 - *Preparation of the evaluation files, including student courses evaluation, alumni survey, and industry evaluation survey of IE graduates*

- *Coordinator of the dept. graduate studies committee and dept. representative of the college graduate studies committee*
 - *Revision of the acceptance criteria of graduate students including GPA, TOEFL scores, etc.*
 - *Development of standard formats for MSc. and PhD proposals*

- *Member of the academic committee*
 - *Highly involved in the separation of the IE from a program within the Mechanical Engineering Dept. into a separate academic dept.*
 - *Highly involved in revising the old Master program by offering two separate programs (one course-based and one thesis-based) and in introducing three tracks in the Master program (systems, manufacturing and safety)*
 - *Highly involved in adjusting the old BSc. Program by reducing the 176 credit hours to 160 credit hours, omitting tracks and revising the content of some of the courses*

- *Member of the BSc. Project committee*
 - *Development of a standard format for BSc. Project reports*

- *Design of seminars for improving report writing and presentation skills*
- *Highly involved in the design of the current presentation and grading systems of BSc. projects*

AFFILIATIONS

- The Society for Risk Analysis (SRA)
- American Mathematical Society (AMS),
- Operations Research Society of America (INFORMS)
- Tunisian Scientific Society (TSS)
- Saudi-Industrial Engineering Society (SIES)
- Institute of Industrial Engineers (IIE)

PUBLICATIONS

Book Editing

V. M. Bier and M. N. Azaiez, "**GAME THEORETIC RISK ANALYSIS OF SECURITY THREATS**", Springer: The International Series of Operations Research and Management Science, *Vol. 128, 2009, ISBN 978-0-387-87766-2*.

Scientific Papers

1. A. Gharbi, M. N., Azaiez, M. Kharbech (2010), "Minimizing Expected Attacking Cost in Networks", *Electronic Notes in Discrete Mathematics*, Volume 36, pp. 947–954.
2. M. N. Azaiez, *Aggregation in Decision Problems: The Concept and the Applications* (2009), *Journal of King Saud University, Engineering Sciences*, 21 (2), 101-110.
3. I. Al-Harkan, M. N. Azaiez, M. Hariga, A. Alazba, M. Fawzan (2009), "A decision Support System for Water and land management", *Journal of King Saud University, Engineering Sciences*, 21 (2), 77-85.
4. M. N. Azaiez (2008), "Modeling Optimal Allocation of Deficit Irrigation: Application to Crop Production in Saudi Arabia", *Journal of Mathematical Modeling and Algorithms*, 7, 277-289 (2008).
5. M. N. Azaiez (2008), "An integrated DP-MIP Model for Optimal Crop Mix Selection with Deficit Irrigation", *Asia Pacific Journal of Operational Research*, 25 (5) 625 – 647.
6. M. N. Azaiez and V. M. Bier (2007), "Optimal Resource Allocation for Security in Reliability Systems", *European Journal of Operational Research*, 181, 773-786.
7. K. Al-Arfaj, K. Dahal, and M.N. Azaiez (2007), Maintenance Cost Models in Deregulated Power Systems Under Opportunity costs, *Proceeding (582) European Power and Energy Systems*
8. Moncer A. Hariga, M. N. Azaiez, and Mohamed Ben Daya (2006), "A Discounted Integrated Inspection-Maintenance Model for a Single Deteriorating Production facility", *Journal of Transactions in OR*, 13 Issue 4, 353-364.
9. Moncer A. Hariga and M. N. Azaiez (2006), "Heuristics Procedures for the Single Facility Inspection Problem with Minimum Repair and Increasing Failure Rate, *Journal of Operational Research Society (JORS)*, 57, 1081-1088.

10. M. N. Azaiez and Sultan Al-Sherif (2005), "A 0-1 Goal Programming Model for Nurse Scheduling", **Computers and Operations Research**, 32, 491-507.
11. M. N. Azaiez, Moncer A. Hariga, and Ibrahim Al-Harkan (2005), "A Chance-Constrained Multi-Period Model for a Multi-Reservoir System under Water Deficit and Severe Overdrafts of the Aquifer", **Computers and Operations Research**, 32, 1337-1351.
12. M. N. Azaiez, "A Multi-Attribute Approach for a Quality-Dependent PM Model (2004), *the Proceedings of the 2nd International Conference on Industrial Engineering*, Riyadh (fully refereed paper).
13. K. Al-Sitt and M. N. Azaiez (2004), "Modeling Optimal Allocation of Deficit Irrigation", *the Proceedings of the 2nd International Conference on Industrial Engineering*, Riyadh (fully refereed paper).
14. M. N. Azaiez and Khalid Al-Arfaj (2004), A Quality-Dependent PM Model with Opportunity Costs, **Gulf Organization for Industrial Consulting**, (94), 3-26.
15. M. N. Azaiez (2002), "A Model for Conjunctive Use of Ground and Surface Water with Opportunity Costs", **European Journal of Operational Research**, vol. 143, pp.611-624.
16. M. N. Azaiez (2002), "A Multi-Attribute Preventive Replacement Model", **The Journal of Quality in Maintenance Engineering**, vol. 8, No. 3, pp. 213-225.
17. M. N. Azaiez and Moncer A. Hariga (2001), "A Single-Period Model for Conjunctive Use of Ground and Surface Water under Severe Overdrafts and Water Deficit", **European Journal of Operational Research**, vol. 133, No. 3, p. 653-666.
18. Mohamed Haouari and M. N. Azaiez (2001), "Optimal Cropping Patterns under Water Deficit", **European Journal of Operational Research**, vol. 130, No. 1, p. 133-146.
19. M. N. Azaiez and Vicki M. Bier (1996), "Aggregation Error in Bayesian Analysis of Reliability Systems", **Management Science**, vol. 42, No. 4, p. 516-528.
20. M. N. Azaiez (1995), "Agrégation Parfaite dans des Problèmes de Gestion avec Approche Bayésienne", **Revue Tunisienne d'Economie et de Gestion**, vol. X, No 14.
21. M. N. Azaiez and Vicki M. Bier (1995), "Perfect Aggregation for a Class of General Reliability Models with Bayesian Updating", **Applied Math and Computation**, vol. 73, p. 281-302.
22. M. N. Azaiez and Vicki M. Bier (1994), "Perfect Aggregation in Bayesian Estimation for Several Realistic Reliability Models", **Applied Math and Computation**, vol. 64, p. 139-153.
23. M. N. Azaiez and Vicki M. Bier (1993), "Perfect Aggregation in Reliability Models with Bayesian Updating", **Journal of American Statistical Association**, 1993 Proceedings of the Section on Bayesian Statistical Science, p. 179-183.

Book Chapters

1. M. N. Azaiez (2008), A Bayesian Model for a Game of Information in Optimal Attack/Defense Strategies, to appear in V. M. Bier and M. N. Azaiez, "GAME THEORETIC RISK ANALYSIS OF SECURITY THREATS", Springer: The International Series of Operations Research and Management Science, forthcoming.

2. V. M. Bier, Louis A. Cox Jr., and M. N. Azaiez (2008), *Why both Game Theory and Reliability Theory are important in defending infrastructure against intelligent attacks, to appear in V. M. Bier and M. N. Azaiez, "GAME THEORETIC RISK ANALYSIS OF SECURITY THREATS", Springer: The International Series of Operations Research and Management Science, forthcoming.*
3. M. A. Hariga and M. N. Azaiez (2001), *"Optimal Inventory Ordering Policies for Quality-Dependent Markets", Chapter 9, p. 161-183 of "Integrated Production, Maintenance, Quality and Inventory", Kluwer Academic Publishers, Boston, ISBN 0-7923-7347-2.*

Papers under review

1. A. Ben Yaghlane and M. N. Azaiez, "System survivability under attack- the discrete case.
2. A. Ben Yaghlane, M. N. Azaiez and M. Mrad "System survivability in networks".
3. S. Rebai, M. N. Azaiez, and D. Saidane, "Banking Performance evaluation towards a sustainable bank: A multi-attribute utility approach".
4. S. Rebai, M. N. Azaiez, and D. Saidane, "Sustainable Finance and Sustainable Banking: Conceptualization.

Papers in preparation

1. M. N. Azaiez, "Modeling the Game of Information in Optimal Attack/Defense Strategies on CFR Systems: A Bayesian Approach".
2. A. Gharbi, M. N. Azaiez, and M. Kharbeche: *Exact and Heuristic Methods in Defense-Attack Strategies in Networks: The Attacker Problem*
3. A. Gharbi, M. N. Azaiez: *Exact and Heuristic Methods in Defense-Attack Strategies in Networks: Defender Problem*
4. M. N. Azaiez, *Selecting the optimal intermediate aggregation level in Bayesian reliability Analysis.*
5. S. Rebai, M. N. Azaiez, *A multi-attribute utility model for performance evaluations of financial institutions*
6. A. Gharbi, M. A. Louly, M. N. Azaiez, A. Bouras: *Optimal Nurse Scheduling at a Local Hospital.*
7. A. Gharbi, M. A. Louly, M. N. Azaiez, A. Bouras: *Optimal Nurse Staffing at a Local Hospital.*
8. A. Gharbi, M. A. Louly, M. N. Azaiez, A. Bouras: *Optimal Scheduling Models of Safety personnel at a Local Hospital.*

COMMUNICATIONS

- TSS Annual Congress, July 1998, Kheops Hotel, Nabeul, "Optimal Cropping Patterns under Water Deficit".
- ESREL '96-PSAM-II, Probability and Safety Assessment and Management 1996, 24-28 June 96, Crete, Greece, "Perfect Aggregation in Bayesian Analysis of Reliability Models".
- MAG-MAT, Premières Journées Maghrébines des Mathématiques Appliquées, 1-5 November 1994, Bizerte, "Perfect Aggregation in Reliability Models with Bayesian Updating".

- International Society for Bayesian Analysis (ISBA), First World Meeting, Nikko Hotel, San Francisco, California, 6-8 August, 1993, “Perfect Aggregation in General Reliability Models with Bayesian Updating”.
- TIMS/ORSA Joint National Meeting, Hilton Hotel, Chicago, Illinois, 16-19 May 1993, “Perfect Aggregation in General Fault-Tree Models”.

INVITED TALKS & Special Events

- **Co-Director of NATO SCIENCE FOR PEACE AND SECURITY PROGRAMME**, advanced research workshop on use of risk analysis in computer-aided persuasion, antalya, turkey, may 23-26, 2011.
- **Invitation as a guest speaker to the annual meeting of the Society for Risk Analysis, Boston December 7-10, 2008.**
- Invitation as a guest speaker to the cluster on Operations research and homeland security, at the INFORMS annual meeting: "The game of information in optimal defense/attack strategies", Seattle November 4-7, 2007.
- **Invitation from the Computer Science dept. at the university of Wisconsin-Madison for a series of talks, 2005: "Modeling attack/defense strategies using game theory".**
- Water Management from Strategic perspectives, sponsored by King Abdulaziz City for Science and Technology, March 2001.
- "Operations Research Tools in Water Management", sponsored by the Research Center of the College of Engineering at King Saud University, April 2000.
- **Invitation as a guest speaker to the cluster on aggregation at the INFORMS annual meeting, 1998 at Cincinnati.**
- "The concept of Aggregation", sponsored by the Mechanical Engineering Department of King Saud University, November 1997.