Kemal Kilic

Sabanci University
Faculty of Engineering and Natural Sciences
Orhanli, Tuzla 34956, Istanbul, Turkey
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Tel: +90 (216) 483 9596

Education

- Ph.D. in Industrial Engineering, **University of Toronto,** Toronto, ONT, (2002)
  Thesis: "*A Proposed Fuzzy System Modeling Algorithm With An Application In Pharmacokinetic Modeling*"

- M.Sc. in Industrial Engineering, **Bilkent University**, Ankara, TURKEY, (1997)
  Thesis: "*Generating Short Term Observation Schedules for Space Mission Projects*"

- B.Sc. in Electrical and Electronics Engineering, **Bogazici University**, Istanbul, TURKEY, (1995)

Research Interests

- Data Mining
- Decision Support Systems
- Heuristic Search and Optimization Techniques
- Innovation Management
- Health Informatics

Teaching

Sabanci University (Faculty of Engineering and Natural Sciences)

- Data Mining and Operations Research (*Graduate*)
- Data Visualization and Analysis (*Undergraduate*)
- Decision Support Systems (*Undergraduate*)
- Decision Analysis (*Undergraduate*)
- Decision Making & Regulations in Energy Planning (*Graduate*)
- Optimization Models and Methods in Bioinformatics (*Graduate*)
- Business Transformation Methodology and Applications (*with P&G*) (*Undergraduate*)
- Supply Chain Management (*Graduate*)
- Optimization Models and Methods in Wireless Networks (*Graduate*)
- Production and Service Systems Operations (*Undergraduate*)
- Quality Planning and Control (*Undergraduate*)
- Introduction to Manufacturing Systems (*Undergraduate*)

University of Toronto (Mechanical and Industrial Engineering Department)

- Production Planning and Control (*Graduate*)
- Systems Modelling and Simulation (*Undergraduate*)

York University (Business School)

- Quantitative Methods (*Undergraduate*)
- Operations Management (*Undergraduate*)

Academic Experience

- Faculty Member (2002- …)
  Faculty of Engineering and Natural Sciences
  Sabanci University, Istanbul, Turkey

- Visiting Scholar (2011, Spring)
  DECSAI, Department of Computer Science and Artificial Intelligence
  University of Granada, Granada, Spain

- Visiting Scholar (2010, Summer)
  School of Business
  Airlangga University, Surabaya, Indonesia

- Visiting Scholar (2009, Summer)
  Atkinson School of Business
  York University, Toronto, Ontario, Canada

- Instructor (1998 –2000)
  Mechanical and Industrial Engineering
  University of Toronto, Toronto, Ontario, Canada

- Teaching Assistant (1997-1998,2000-2001)
  Mechanical and Industrial Engineering
  University of Toronto, Toronto, Ontario, Canada

- Research Assistant (1998 - 2001)
  University of Toronto-Sunnybrook Health Science Center, Toronto, ONT,
  University-MRC project**,** "Fuzzy System Modeling of Psychopharmacological Drugs"

- Research Assistant (1997 - 1998)
  University of Toronto-Rotoflex Int., Mississauga, ONT
  University-company project**,** "Lateral Control of Web Machine Using Fuzzy Logic"

- Research and Teaching Assistant (1995-1997)
  Industrial Engineering
  Bilkent University, Ankara, Turkey

Administrative Experience

- TUBITAK– BILTEG (The Scientific and Technological Research Council of Turkey - Information Technology Group) Administrative Board Member (2014-...)

- **SU** Manufacturing Systems Engineering Program Erasmus Coordinator (2011 – 2012)

- **SU** Manufacturing Systems Engineering Program Coordinator (2006 – 2008)

- **SU** Industrial Engineering Graduate Program Coordinator (2002 –2004)

Publications	**Journal Papers**

1. D. Y. Eroglu and K. Kilic, "A Novel Hybrid Genetic Local Search Algorithm for Feature Selection and Weighting with an Application in Strategic Decision Making." (*under review*)

2. S. Davari, K. Kilic, and S. Nadari, "An Efficient Variable Neighborhood Search For Preventive Healthcare Network Design" (*under review*)

3. K. Kilic and C. Hamarat, "Web Based Decision Support System For Managing Innovation" (*under review*)

4. I. Köse, M. Göktürk and K. Kilic, "Interactive Machine Learning Based Electronic Fraud and Abuse Detection System in Health Care Insurance", Applied Soft Computing, vol. 36, pp. 283–299. (2015), DOI:10.1016/j.asoc.2015.07.018

5. S. Davari, K. Kilic and G. Ertek, "Fuzzy Bi-objective Preventive Health Care Network Design", Health Care Management Science, vol. 18(3), pp. 303-317 (2015), DOI: 10.1007/s10729-014-9293-z

6. G. Ulusoy, K. Kilic, G. Günday and L. Alpkan, "Intellectual Capital And Organizational Culture: Two Major Determinants Of Innovativeness In Manufacturing Firms", International Journal of Innovation and Regional Development, vol. 6(2), pp. 125 -158. (2015), DOI: 10.1504/IJIRD.2015.069662

7. K. Kilic, G. Ulusoy, G. Gunday and L. Alpkan, "Innovativeness, Operations Priorities and Corporate Performance: An Analysis Based on a Taxonomy of Innovativeness", Journal of Engineering and Technology Management, vol. 35, pp. 115-133. (2015), DOI: 10.1016/j.jengtecman.2014.09.001

8. K. Kilic and O. Bozkurt, "Computational Intelligence Based Decision Support Tool for Personalized Advertisement Assignment System", International Journal of Computational Intelligence Systems, vol. 6(3), pp. 396-410 (2013). DOI: 10.1080/18756891.2013.780725

9. G. Günday, G. Ulusoy, K. Kilic, and L. Alpkan, "Effects of Innovation Types on Firm Performance", International Journal of Production Economics, vol. 133(2) p.p. 662-676 (2011). DOI: 10.1016/j.ijpe.2011.05.014

10. L. Alpkan , Ç. Bulut, G. Günday, G. Ulusoy, and K. Kilic "Organizational Support for Intrapreneurship and its Interaction with Human Capital to Enhance Innovative Performance", Management Decision, vol. 48 (5) p.p. 732-755 (2010). DOI: 10.1108/00251741011043902

11. K. Kilic, Ö. Uncu, and I. B. Türkşen "Comparison of Different Strategies of Utilizing Fuzzy Clustering in Structure Identification", Information Sciences, vol. 177(23) p.p. 5153-5162 (2007). DOI:10.1016/j.ins.2007.06.030

12. M. Barutçu, M. B. Yıldırım and K.Kilic "Designing a Global Multi-Disciplinary Classroom: A Learning Experience in Supply Chain Logistics Management", International Journal of Engineering Education, vol. 22 (5) p.p. 1105-1114 (2006)

13. K. Kilic, B. A. Sproule, I. B. Turksen, and C. A. Naranjo "A Fuzzy System Modeling Algorithm for Data Analysis and Approximate Reasoning", Robotics and Autonomous System, vol. 49 (3-4), p.p. 173-180 (2004). DOI:10.1016/j.robot.2004.09.005

14. K. Kilic, B. A. Sproule, I. B. Turksen, and C. A. Naranjo "Pharmacokinetic Applications of Fuzzy Structure Identification and Reasoning", Information Sciences, vol. 162 (2), p.p. 121-137 (2004). DOI:10.1016/j.ins.2004.03.005

15. K. Kilic, B. A. Sproule, I. B. Turksen, and C. A. Naranjo, "Fuzzy system modeling in pharmacology: An improved algorithm", Fuzzy Sets and Systems, vol. 130 (2), p.p. 253-264 (2002)

16. B. A. Sproule, K. Kilic, C. A. Naranjo, and I. B. Turksen, "Exploring fuzzy logic pharmacokinetic modeling: Alprazolam experiment", Clinical Pharmacology and Therapeutics, vol. 67, p.p. 160 [Abstract] (2000)

17. M. S. Akturk and K. Kilic, "Generating short term observation schedules for space mission projects" Journal of Intelligent Manufacturing, vol. 10 (5), p.p.387-404 (1999)

Book Chapters

1. G. Ulusoy, G. Günday, K. Kılıç and L. Alpkan, "Business strategy and innovativeness: results from an empirical study". In: C. Emmanouilidis, M. Taisch, and D. Kiritsis, (Editors), *Advances in Production Management Systems*, IFIP AICT, Series, Springer-Verlag, Berlin (2013)

2. K. Kilic and J. Casillas, "Hybrid Genetic-Fuzzy System Modeling Application in Innovation Management". In: J. Casillas (Editors), *Management Intelligent Systems*, p.p. 25:34, Springer , Berlin Heidelberg, (2012)

3. K. Kilic, "Determining the Factors that Influences Youths Political Preferences Based on an Empirical Survey of Metropolitan Youth", In: C. Boyraz (Editor), *The Youth Discusses: Participation to Politics, Problems and Solution Proposals*, p.p. 29-68, TUSES Istanbul, (2009)

4. G. Ertek and K. Kilic, "Decision Support for Packing in Warehouses". In: A. Levi et al. (Editors), *Lecture Notes in Computer Science,* 4263, p.p. 593-602 , Springer Berlin Heidelberg, (2006)

5. K. Kilic, O. Uncu and I.B. Turksen, "A Comparative Analysis of Fuzzy System Modelling Approaches in Mining Medical Diagnostic Rules", In: G.I. Webb, and H. Y. Xing (Editors), *Advances in Artificial Intelligence,* 3339, p.p. 1194-1199, Springer Berlin Heidelberg, (2005)

Refereed Conference Papers

1. G. Ulusoy, K. Kılıç, G. Günday and L. Alpkan, "What are the determinants leading to innovation in manufacturing firms", In: M. Bulu and G. Arkali-Olcay (Editors), Proceedings of the Sixth International Conference for Entrepreneurship, Innovation and Regional Development (ICEIRD 2013), ISBN : 978-9944-380-09-6, p.p. 98-108, Istanbul, 2013.

2. C. Çapa, G. Ulusoy and K. Kilic, "A Three-Phase Approach for R&D Project Scheduling" In: The International IIE (Institute of Industrial Engineers) Conference (IIE 2013), Istanbul, Turkey, (June 26 – 28, 2013)

3. S. Davari and K. Kilic, "The Bi-Objective Equitable Preventive Healthcare Network Design", In: T. Cayirli, M.M.Gunal, E.D.Gunes and E.L.Ormeci (Editors), Proceedings of the Operational Research Applied to Health Services Conference, ORAHS 2013: Istanbul, 2013

4. G. Ulusoy, G. Günday, K. Kilic and L. Alpkan, "Operation Priorities and Innovativeness" International Conference on Advance Production Management Systems, Rhodes Greece, September, 2012

5. K. Kilic and C. Hamarat, "A DSS for Innovation Management: The Significance of the Innovation Determinants", International Conference on Industrial Engineering and Operations Management, p.p. 439-444, Kuala Lumpur, Malaysia, January 2011

6. İ. Köse, M. Göktürk and K. Kilic, "Fraud Detection in Healthcare Payment Systems", 7th National Medical Informatics Conference, p.p. 37-39, Magosa, Cyprus, October 2010

7. C. Hamarat and K. Kilic, "A Genetic Algorithm Based Feature Weighting Methodology", The 40th International Conference on Computers & Industrial Engineering, Awaji-Yumebutai, Hyogo, Japan, July 2010

8. K. Kilic, and C. Hamarat, "A Decision Support System Framework for Innovation Management", The 5th IEEE International Conference on Management of Innovation and Technology, pp. 765-770, Singapore, June 2010

9. Gunduz Ulusoy, Gurhan Gunday, Kemal Kilic, and Lutfihak Alpkan, "An Empirical Study into the Determinants of Innovativeness in Manufacturing Firms", 3rd International Conference on Innovation, Technology and Knowledge Economics, Ankara, Turkey, June 2009

10. G. Ulusoy, G. Günday, L. Alpkan, and K. Kilic, "Effects of Organizational Innovations on Firm's Production Performance", 2008 IEEE Conference on Industrial Engineering and Engineering Management, pp. 321-325, Singapore, December 2008

11. K. Kilic, "Personalized Advertisement System Based on Computational Intelligence", 11th Joint Conference on Information Science, Advances in Intelligent Systems Research, Vol. 8, Published by Atlantis Press, Shenzhen, China, December 2008

12. G. Günday, G. Ulusoy, K. Kilic, and L. Alpkan, " Modeling Innovation : Determinants of Innovativeness and the Impact of Innovation on Firm Performance", The 4th IEEE International Conference on Management of Innovation and Technology, pp. 766-771, Bangkok, Thailand, September 2008

13. G. Günday, G. Ulusoy, K. Kilic, and L. Alpkan, "An Integrated Innovation Model: How Innovations are Born and What are Their Impacts on Firm Performance?", 15th International EuroMA Conference, pp. 92-101, Groningen, The Netherlands, June 2008

14. N. Özşamlı, B. Aksu, K. Kilic and O. U. Sezerman, "A Modified Framework for Feature Subset Selection in Microarray Data", International Symposium on Health Informatics and Bioinformatics, Istanbul, Turkey, May 2008

15. E. Coban, U. Sezerman and K. Kilic, "Constraint Programming Applied to Simplified Partial Digest Problem with Errors", The 12th Annual International Conference on Research in Computational Molecular Biology (RECOMB2008): Poster Book, Pages: 133-134, Singapore, April, 2008

16. D. Tas, U. Sezerman and K. Kilic, "A New Probabilistic Approach for Simplified Partial Digest Problem", The 12th Annual International Conference on Research in Computational Molecular Biology (RECOMB2008): Poster Book, Pages:135-136 , Singapore, April 2008

17. G. Ertek and K. Kilic, "Heuristic Algorithms for 3D Multiple Bin Sized Bin Packing Problem", 22nd European Conference on Operational Research, Prague, Czech Republic, July 2007

18. G. Ertek and K.Kilic "Decision Support for Packing in Warehouses", 21th International Symposium on Computer and Information Sciences - ISCIS 2006, Istanbul Turkey, November 2006

19. A. Pekin, G. Özkan, O. Eski, U. Karaarslan, G. Ertek and K.Kilic, "Application of the Analytic Hierarchy Process (AHP) for Selection of Forecasting Software", International Symposium On Intelligent Manufacturing Systems- IMS 2006, Sakarya, Turkey, May 2006

20. A. Aksu, O. Ercetin, T. Unluyurt, K. Bulbul, and K. Kilic, "Energy Efficient and Reliable Routing with Cooperative Diversity in Wireless Ad-hoc Networks", 20th International Symposium on Computer and Information Sciences - ISCIS 2005, Advances in Computer Science and Engineering Series, p.p. 339-348 Istanbul, Turkey, 2005

21. O.E. Kundakcioglu, K. Bulbul, T. Unluyurt, K. Kilic, and O. Ercetin, "Minimum Power Multicasting with Delay Bound Constraints in Ad Hoc Wireless Networks", 20th International Symposium on Computer and Information Sciences - ISCIS 2005, Advances in Computer Science and Engineering Series, p.p. 252- 263 Istanbul, Turkey, 2005

22. K. Kilic, O. Uncu and I. B. Turksen, "A Comparative Analysis of Fuzzy System Modelling Approaches: A Case in Mining Medical Diagnostic Rules", AI 2004, Advances in Artificial Intelligence, Cairns, Australia, December 2004

23. K. Kilic, O. Uncu and I. B. Turksen, "Different Approaches of Fuzzy Structure Identification in Mining Medical Diagnosis Rules", IEEE Conference on CIS 2004, p.p. 563 – 568, Singapore, November 2004

24. O. Uncu, K. Kilic and I. B. Turksen, "A New Fuzzy Inference Approach Based on Mamdani Inference Using Discrete Type 2 Fuzzy Sets", IEEE SMC 2004, vol. 3, p.p. 2272 -2277, The Hague, The Netherlands, October 2004

25. K. Kilic, O. Uncu and I. B. Turksen, " Comparative Analysis of Two Approaches for Mining Medical Diagnostic Rules", IMS'2004, Sakarya, Turkey, September 2004

26. M. B. Yıldırım, M. Barut and K. Kilic, "A Global Learning Experience in Supply Chain Logistics Management", 5th Int. Conf. on Information Technology Based Higher Education and Training: ITHET '04, p.p. 263 – 268, Istanbul, May 2004

27. K. Kilic, I. B. Turksen and O. Uncu, "A Type 2 Fuzzy System Modelling Algorithm", EUSFLAT 2003, Zittau, Germany, September 2003

28. O. Uncu, I.B. Turksen and K. Kilic, "LOCALM-FSM: A New Fuzzy System Modelling Approach Using a Two-Step Fuzzy Inference Mechanism Based on Local Fuzziness Level" International Fuzzy Systems Association World Congress, IFSA, p.p. 191-194, Istanbul, Turkey, 2003

29. K. Kilic, I. B. Turksen, B. A. Sproule, and C. A. Naranjo, "A K-nearest neighbourhood based fuzzy reasoning schema", Tenth IEEE International Conference on Fuzzy Systems, p.p. 236-239, Melbourne, Australia, December 2001

30. K. Kilic and I. B. Turksen, "N-Dimensional Structure Identification and Fuzzy Reasoning," in Proceedings of EUSFLAT 2001, p.p. 179-182, Leicester, UK, September 2001

31. K. Kilic, "A Fuzzy System Modeling Algorithm for Data Analysis and Approximate Reasoning," in IMS'2001: Visions for the Future, Sakarya, Turkey, August 2001

32. K. Kilic, B. A. Sproule, I. B. Turksen, and C. A. Naranjo "A comparison of five approaches for lithium dose and serum concentration prediction," in IFSA-NAFIPS Joint Conference, p.p. 104-110, Vancouver, Canada, July 2001(Received the best student paper award)

33. B. A. Sproule, K. Kilic, C. A. Naranjo, and I. B. Turksen., "Population pharmacokinetic modeling of lithium using fuzzy logic", in 102nd Annual Meeting American Society for Clinical Pharmacology and Therapeutics, vol. 69(2), p.p. 86, Orlando, Florida, March 2001[Abstract]

34. S. Felix, B. A. Sproule, K. Kilic, C. A. Naranjo, and I. B. Turksen, "Predicting valproate free-fraction using fuzzy logic: Influence of age and dosage", in 102nd Annual Meeting American Society for Clinical Pharmacology and Therapeutics, vol. 69(2), p.p. 25, Orlando, Florida, March 2001[Abstract]

35. B. A. Sproule,. K. Kilic, C. A. Naranjo, and I. B. Turksen, "Exploring fuzzy logic pharmacokinetic modeling: Alprazolam experiment," in 8th Symposium of the Canadian College of Clinical Pharmacy, Clinical Pharmacology and Therapeutics, vol. 67(2), p.p. 160, Kananaskis, Alberta, June 2000 [Abstract]

36. B. Turksen, B. A. Sproule, K. Kilic, and C. A. Naranjo "Fuzzy logic pharmacokinetic modeling," in Proceedings ERUDIT (European Network in Uncertainty Techniques - Developments for Use in Information Technology) Workshop: Fuzzy diagnostic and therapeutic decision support, p.p. 19-23, Vienna, Austria, May 2000

37. B. Turksen, K. Kilic, O. Uncu, B. A. Sproule, and C. A. Naranjo, "Fuzzy system modeling and its application in pharmacology," in Proceedings of MIF'99: The International Symposium on Medical Informatics and Fuzzy Technology, p.p. 139-145, Hanoi, Vietnam, August 1999

Invited Talks

1. K. Kilic, "Refereeing and Advising for Research and Development Projects:", *2nd Summit of Health Informatics*, Istanbul, Turkey, March, 2013

2. K. Kilic, "A Decision Support System for Innovation Management: A Tool for Senior Level Decision Makers", 19th Congress on Quality, Istanbul, Turkey, November, 2010

3. K. Kilic, "Supply Chain Management", Technical Cooperation among the Developing Countries" sponsored by United Nations Development Program (UNDP) and Turkish Institute for Industrial Management, December, 2003

Organized Meetings

1. Program Committee, International Symposium on Management Intelligent Systems, Salamanca, Spain, May 2013

2. Advisory Committee , 3rd International Conference on Industrial Engineering and Operations Management, Istanbul, Turkey, July 2012

3. Program Committee, International Symposium on Management Intelligent Systems, Salamanca, Spain, July 2012

4. Organization Committee, 30th National Congress on Operations Research and Industrial Engineering (YAEM 2010), Istanbul, Turkey, July 2010

5. Organization Committee, Workshop on Drivers of Change, Istanbul, Turkey, October 2007

6. Organization Committee, Workshop on Sustainability, Valuation and Innovation, Istanbul, Turkey, October 2006

7. International Program Committee, IMS 2006, 5th International Symposium on Intelligent Manufacturing Systems, Sakarya, Turkey, September 2006

8. Organization Committee, Workshop On Industrial Design and Product Development In The Automotive Industry, Istanbul, Turkey, October 2004

9. International Program Committee, IMS 2004, 4th International Symposium on Intelligent Manufacturing Systems, Turkey, September 2004

10. Organization Committee, Workshop On Opportunities For Strategic Alliances Between Manufacturers And Suppliers In The Automotive Industry, Istanbul Turkey, September 2003

Supported Projects	1. A Contract Management System for Health Care Insurance Companies, Advisor, funded by TUBITAK-TEYDEB, Budget: appr. 670,000 TL (SU Share is 40,000 TL + VAT) (2013-2015)
	2. Tactical and Operational Level Staff Planning and Duty Assignment for Health Care Service Providers, Advisor, funded by TUBITAK-TEYDEB, Budget: appr. 613,000 TL (SU Share is 35,000 TL + VAT) (2013-2015)
	3. Dynamic Risk Assessment Management in Health Care Insurance Systems, Advisor, funded by TUBITAK-TEYDEB, Budget: appr. 1,100,000 TL (SU Share is 75,000 TL + VAT) (2011-2013)
	4. Hybrid Genetic Fuzzy System Modelling Development – Application In Innovation Management, Principal Investigator, funded by TUBITAK- 2219, Budget: appr. 30.000 TL (2011)
	5. Fraud Detection in Health Care Insurance Systems; A Decision Support System, Advisor, funded by TUBITAK-TEYDEB, Budget: appr. 978.000 $ (SU share is 180.000 TL+ VAT), (2008-2011)
	6. A Decision Support System for Developing Innovation Policies, Principal Investigator, funded by TUBITAK Career Development Grant Program, Budget: 111.950 TL, (2008 - 2010)
	7. Innovative Models and Applications in Manufacturing Industries Research Project, Researcher, funded by TUBITAK - 1001, Budget: 122.428 TL, (2006-2008)
	8. Project Analysis and Development Methodology, Researcher, funded by Logo Business Solutions and TUBITAK- TIDEB(2002-2003)
Awards & Honors	• The Scientific and Technological Research Council of Turkey Career Development Grant (2007)
	• Ranked in First Five in Sabanci University Graduating Class Teaching Award (2005)
	• 2000-2002 Ontario Graduate Student Fellowship (2 years)
	• 2001 Best Student Paper Award in IFSA-NAFIPS conference
	• 1997-2000 University of Toronto Open Fellowship (3 years)
	• 1997 – Turkish Ministry of National Education – Awarded Full Scholarship for Graduate Studies (*not used*).
	• 1995-1997 Bilkent University Graduate Fellowship (2 years)
	• 1992- 1995 Sabanci Foundation Undergraduate Fellowship (3 years)
	• 1990 – Award from Is Bank of Turkey by being the 60th successful student among more than one million high school graduates entering the central "University Entrance Examination"

Professional Activities	**Editorial Board Membership:** • Advances in Fuzzy Systems **Refereed for:** • IEEE Transactions on Fuzzy Sets • Computer Methods and Programs in Medicine • Information Sciences • Production Planning and Control • Fuzzy Sets and Systems • European Journal of Operations Research • Optimization Letters • Computers and Industrial Engineering • International Journal of Robotics and Autonomous System • Advances in Fuzzy Systems • Iranian Journal on Fuzzy Systems • Industrial Marketing Management • Journal of Advances in Information Fusion • Journal of Operational Research Society (Turkey) • Industrial Engineering Journal (Turkey) • Economics Management and Finance Journal (Turkey)
Special Interest	History, Cooking, International Cultural Studies, Natural Sciences