

**Curriculum Vitae
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CONTACT INFORMATION

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1. EDUCATION

- Bachelor of Science, Civil Engineering, 1995, Amirkabir University (Tehran Polytechnic), Tehran, Iran.
- Master of Science, Water Engineering (Civil Engineering), 1997, Amirkabir University (Tehran Polytechnic), Tehran, Iran.
 - Title of Masters Thesis: “Application of Geographic Information Systems (GIS) in Water Resources Management”
- Ph.D., Water Resources Management (Civil Engineering), 2002, Amirkabir University (Tehran Polytechnic), Tehran, Iran.
 - Title of Ph.D. Thesis: “A Decision Support System (DSS) for Operating Multipurpose Reservoirs with Hydropower Facilities”
- Post-doc researcher, 2009, Department of Water and Environmental Engineering, University of Illinois at Urbana-Champaign, IL, USA:
 - Title of the post-doc project: “A Fast Genetic Algorithm Model For Shared Memory Parallel Computing”.

2. PROFESSIONAL EXPERIENCES

- Associate Professor, School of Civil Engineering, University of Tehran, Tehran, Iran, June 2008-present.
- Visiting Professor, University of Illinois at Urbana-Champaign, IL, USA, 2009.
- Assistant Professor, College of Engineering, University of Tehran, Tehran, Iran, 2002-2008.
- Director, Office of Public and International Relations, College of Engineering, University of Tehran, Iran, 2003-2008.
- Member, Water Research Council, Tehran Water Authority, 2003-Present.
- Member, Water Resource Committee, Water Research Council, Water Affairs Division of the Ministry of Energy, 2003-.2004
- Major Investigator in Research Project in University of Tehran, 2006-Present:

- Development of operation policies for cascade of reservoirs on Dez River during floods, Deputy for Research, Water Resources Management Organization, Iran, 2007-2008.
- Climate signals clustering with respect to precipitation variations in Sistan & Baluchestan province in Iran, Deputy for Research, Water Resources Management Organization, Iran, 2007.
- Development of the Operation Optimization Model for River-Reservoir Systems Based on Flood Risk Management, Iran National Science Foundation, Iran, 2008-2009.
- Development of Climate Signals and Meteorological Data Clustering Model For Forecasting of Low Precipitation Spells, Tehran Water Authority, 2008-Present.
- Visiting Ph.D. Student, Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona, November 2000-2001.
 - Streamflow Forecasting Considering Effects of ENSO Climate Signals on Precipitation and Streamflow.
 - Decision Support System for Sustainable Water Resources Planning and Management
- Co-investigator in Research Projects in Amirkabir University and University of Tehran (1999-2005):
 - Application of Fuzzy Set Theory in Water Resources Management, Research Project Funded by Water Research Council, Water Affairs Division of the Ministry of Energy, 1999 – 2000
 - Flexible Pattern for Operation of Reservoirs, Research Project Funded by National Research Organization, 1999-present.
 - Master Plan for Water Resources Pollution Reduction in Isfahan Province, 2000.
 - Conjunctive Use of Surface and Groundwater Resources In Southern Part of Tehran Metropolitan Area, Project Funded by Water Research Council, Water Affairs Division of the Ministry of Energy, 2000 – 2002
 - Decision Support System for Operation of Multi-purpose Reservoirs with Hydropower Facilities, Project Funded by Water Research Council, Water Affairs Division of the Ministry of Energy, 2000 – 2002
 - Monitoring and Evaluation Schemes for Drip and Pressure Irrigation Projects, Project funded by Iranian Ministry of Agriculture, Tehran, Iran, 2000-2001.
 - Master Plan for Water Resources Pollution Reduction in Karoon River, Project funded by the Department of Environment, 2002-2004.
 - Evaluation of Water Sector Performance in the Third 5-year National Development Plan, Project Funded by Water Research Council, Water Affairs Division of the Ministry of Energy, 2003 – 2005.
 - Assessment of Water Quality Management in the Khusestan Province in Iran, Project funded by the World Bank, 2004.
 - Design of Water Quality Monitoring Network for Karoon River in Iran, Project funded by the World Bank, 2004-2005.

- Seasonal Streamflow Forecasting using Large Scale Climate Signals, Project Funded by Water Research Council, Water Affairs Division of the Ministry of Energy, 2003 – 2005.
 - Long-term Precipitation Forecasting Using Climate Signals, Project funded by the Iranian Meteorological Organization, 2004-2005.
 - Assessments of the Needs and Requirements for Establishing an Integrated Engineering Licensing System in Iran, Project funded by the Department of Environment, 2004-2005.
- Senior Engineer, Jamab Consulting Engineers, 1994-1998
 - Modeling of Surface Water Supply System of Tehran Metropolitan Area, 1993-1995.
 - Development of Decision Support System (DSS) for Operation of Reservoirs in Tehran, 1995-1996.
 - Mathematical Model for Zarinah-Rud (Bookan) Reservoir Operation, 1993-1995.
 - Development of Decision Support System (DSS) for Operating Zarinah-Rud River (Bookan) Reservoir, 1995-1996.
 - Mathematical Modeling of Zayandeh-Rud Reservoir Operation, 1994-1996.
 - Karoon River Training for Water Transportation and Flood Control, Coordination and Supervision of the Study done by three Consultants, 1996-1998.
 - Mathematical Modeling of Shahid-Abaspoor (Karoon-I) and Dez Reservoirs Operation, 1996-1998.
 - Integrated Water Resources Development in Tehran Metropolitan Area, 1996-1998.

3. MEMBERSHIP IN PROFESSIONAL SOCIETIES

- Member, Iranian Hydraulic Association, 1994-present
- Member, Iran Water Resources Association, 1999-present.
- Member, Iranian Society of Environmentalists, 1997-present
- Member, American Geophysical Union, 2001-2002.
- Student Member, American Society of Civil Engineers, 2001-2002.
- Chairman, Water and Wastewater Committee, Iranian Society of Environmentalists, 2002-2003.

4. PUBLICATIONS

4.1. Books

- Karamouz, M., Szidarovszky, F, and Zahraie, B., Water Resources Systems Analysis, LEWIS Publishers, Boca Raton, Florida 33431, USA, 2003.

- Zahraie, B., Sepaskhah, A. (editors), Proceedings of the First Annual Conference on Water Resources Management in Iran, University of Tehran, Tehran, 2004 (in Farsi).
- Zahraie, B., and S. M. Hosseini, ‘Genetic Algorithms’, Forthcoming (in Farsi).
- Project Management Institute (2004), “A Guide to the Project Management Body of Knowledge - Third Edition”, Ministry of Health Publication Center, Forthcoming (Translated to Farsi).
- Project Management Institute (2002), “Government Extension to A Guide to the Project Management Body of Knowledge - Third Edition”, Ministry of Health Publication Center, Forthcoming (Translated to Farsi).
- Project Management Institute (2003), “Construction – Extension to A Guide to the Project Management Body of Knowledge - Third Edition”, Ministry of Health Publication Center, Forthcoming (Translated to Farsi).
- Project Management Institute (2003), “Organizational Project Management Maturity Model (OPM3) – Knowledge Foundation”, Ministry of Health Publication Center, Forthcoming (Translated to Farsi).

4.2. Journal Publications

- Karamouz, M., B. Zahraie, A. Ostad-Rahimi, and H. R. Safavi, “Planning for Sustainable Development: Rivers Self Purification Models, Journal of Water and Wastewater, No. 19, 1996 (Farsi).
- Karamouz, M. and B. Zahraie, “Nonstructural Means of Flood Control with an Overview on Recent Developments in Iran”, Journal of Water and Development, Vol. 6, No. 1, 1998 (Farsi).
- Karamouz, M., B. Zahraie, M. Shahsavari, S. Torabi, and Sh. Araghi-Nejhad, “An Integrated Approach to Water Resources Development of Tehran Region in Iran”, Journal of American Water Resources Association, 37(5), 1301-1311, 2001.
- Zahraie, B. and Karamouz, M., “Flexibility in Water Resources Planning and Management”, Scientific and Research Journal of Sharif University, Spring 2002 (Farsi).
- Karamouz, M., R. Kerachian, B. Zahraie, and Sh. Araghi-Nejhad, “Monitoring and Evaluation Scheme using MCDM Technique: Application to Irrigation Projects”, ASCE Journal of Irrigation and Drainage Engineering, 128(6), 2002, pp 341-350.
- Karamouz, M., B. Zahraie, and N. Khodatalab, “Reservoir Operation Optimization: A Nonstructural Solution for Control of Seepage from Lar Reservoir in Iran”, IWRA-Water International, 28(1), 19-26, March 2003.
- Karamouz, M., B. Zahraie, and R. Kerachian, “A Master Plan for Pollution Control: A Case Study for Isfahan Province in Iran”, IWRA – Water International, Sept. 2003.
- Zahraie, B. and M. Karamouz, “Operation Management of Hydropower Reservoirs: A Time Decomposition Approach”, Journal of Scientia Iranica, Spring 2004.

- Karamouz, M., R. Kerachian, and B. Zahraie, “Water Resources and Irrigation Planning: A Case Study of Using Surface and Groundwater Resources”, *ASCE Journal of Irrigation and Drainage Engineering*, 130(5), 2004, pp 391-402.
- Karamouz, M. and B. Zahraie, “Seasonal Streamflow Forecasting Using Snow Budget and El-Nino Southern Oscillation Climate Signals: Application to the Salt River Basin in Arizona”, *ASCE – Journal of Hydrologic Engineering*, 9(6), 2004, 523-533.
- Karamouz, M., B. Zahraie, Sh. Araghi-Nejhad, “A Decision Support System for Monthly Operating of Hydropower Reservoirs: A Case Study”, *ASCE Journal of Computing in Civil Engineering*, 19(2), 2005, pp 194-207.
- Karamouz, M., B. Zahraie, R. Kerachian, N. Jafarzadeh, N. Mahjouri, “Developing a master plan for hospital solid waste management: A case study”, *Journal of Waste Management*, 27, 626-638, 2007.
- Karamouz, M., B. Zahraie, R. Kerachian, N. Mahjouri-Majd, A. Moridi, “Development of A Master Plan for Industrial Waste Management”, *International Journal of Environmental Science and Technology*, 3(3), 229-242, Summer 2006.
- Zahraie, B., and A. Roozbahani, “SST Clustering based on Precipitation Variation (Case Study of Sistan and Balouchestan Province Precipitation Forecasting)”, *Iranian Journal of Watershed Management – Science and Engineering*, 1(2), 2008 (Farsi).
- Zahraie, B., and A. Roozbahani, “Long lead Precipitation Forecasting Using Climate Signals and Modified K-Means Method (Case Study of Sistan & Baluchestan Province in Iran)” *Sharif Journal of Science and Technology*, Forthcoming.
- Zahraie, B., R. Kerachian, B. Malekmohammadi, “Reservoir operation optimization using adaptive varying chromosome length genetic”, *Water International*, 33(3), 1-12, 2008.
- Zahraie, B. and M. Hosseini, “Development of Reservoir Operation Policies Considering Variable Agricultural Water Demands”, *Expert Systems with Applications*, 2008, doi: 10.1016/j.eswa.2008.06.135.
- Karamouz, M., B. Zahraie, R. Kerachian, A. Eslami, (2008), “Crop Pattern and Conjunctive Use Management: A Case Study”, *Irrigation and Drainage*, DOI: 10.1002/ird.4.
- Zahraie, B. and M. Tavakolan (2009), “Stochastic Time-Cost-Resource Utilization Optimization Using Nondominated Sorting Genetic Algorithm and Discrete Fuzzy Sets”, *ASCE Journal of Construction Engineering and Management*, Forthcoming. [http://dx.doi.org/10.1061/\(ASCE\)CO.1943-7862.0000092](http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0000092)
- Malekmohammadi, B., R. Kerachian, B. Zahraie (2009) “Developing monthly operating rules for a cascade system of reservoirs: Application of Bayesian Networks”, *Environmental Modeling & Software*, 24(12), 1420-1432.
- Malekmohammadi, B., B. Zahraie, R. Kerachian (2009), “A Real-time operation model for flood management in river-reservoir systems”, *Natural Hazards*, DOI 10.1007/s11069-009-9442-8.

4.3. Conference Proceedings

- Karamouz, M., and B. Zahraie, “Water Resources Management of Tehran Metropolitan Area: A Decision Support System (DSS)”, Proceedings of the fifth ASCE Water Resources Operation Management Workshop, Washington D.C., March 3-5, 1996.
- Karamouz, M. and B. Zahraie, “Water Resources Management of Tehran Metropolitan Area: A Decision Support System (DSS)”, Proceedings of the fifth ASCE Water Resources Operation Management Workshop, Washington D.C., March 3-5, 1996.
- Karamouz, M. and B. Zahraie, “Nonstructural Means of Flood Control for Protection of Isfahan Metropolitan Area in Iran”, Proceedings of International Workshop on Non-structural Flood Control in Urban Areas, Sao Paulo, April 20-22, 1998.
- Karamouz, M. and B. Zahraie, “Conjunctive Use of Traditional and Modern Techniques in Regional Water Resources Allocation”, Regional Workshop on Traditional Water Harvesting Systems, April 25-28, 1999.
- Karamouz, M., B. Zahraie, S. Torabi, M. Shahsavari, “Integrated Water Resources Planning and Management for Tehran Metropolitan Area in Iran, 26th ASCE Annual Water Resources Planning and Management Conference, Tempe, Arizona, June 6-9, 1999.
- Karamouz, M. and B. Zahraie, “A Perspective on Water Reuse in Tehran”, 2000 Water Reuse Conference, San Antonio, Texas, January 30- February 2, 2000.
- Karamouz, M., B. Zahraie, N. Khodatalab, ‘Decision Support System for Operation of Karoon and Dez Reservoirs in Iran’, ASCE 2000 Joint Conference on Water Resources Engineering and Water Resources Planning and Management, Minneapolis, Minnesota, 2000.
- Karamouz, M., B. Zahraie, and A. Taebi, “A Master Plan for Water Pollution Control: A Case Study for Isfahan Province in Iran”, Proceedings of Second Conference on Water and Wastewater Management in Asian Countries, Tehran, Iran, May 8-10, 2001.
- Karamouz, M., Sh. Araghi-Nejad, and B. Zahraie, “A Decision Support System for Hydropower Reservoirs with Application to Karoon and Dez System in Iran”, Proceedings of World Water and Environmental Resources Congress (ASCE), Orlando, Florida, May 20-24, 2001.
- Zahraie, B., M. Karamouz, B. Imam, and S. Sorooshian, “Seasonal Streamflow Forecasting Using Snow Budget and ENSO Climate Signals: Application to Salt River Basin in Arizona”, American Geophysical Union Spring Meeting, Boston, Massachusetts, May 29-June 2, 2001.
- Karamouz, M., R. Kerachian, Banafsheh Zahraie, and Behnam Zahraie, “Conjunctive Use of Surface and Groundwater Resources”, Proceeding of ASCE 2002 Conference on Water Resources Planning and Management, Roanoke, Virginia, May 19-22, 2002.
- Karamouz, M., R. Kerachian, N. Jafarzadeh, B. Zahraie, “Planning for Sustainable Development: Master Plan for Water Pollution Reduction in Karoon River”, Proceedings of 4th National Biannual Conference of Iranian Society of Environmentalists, Tehran, Iran, 2003.

- Karamouz, M., K. Behzadian, B. Zahraie, and R. Kerachian, “An Evolutionary Model for Operation of Hydropower Reservoirs”, Proceedings of EWRI International Water Resources and Environmental Congress, Philadelphia, Pennsylvania, 2003.
- Karamouz, M., B. Zahraie, and Sh. Araghi-Nejad, “Decision Support System for Operation of Hydropower Reservoirs”, Proceedings of the National Conference on Hydropower Plants, Tehran, Iran, 2003.
- Zahraie, B., Karamouz M., and Eghdami S., “Seasonal Precipitation Forecasting Using Large Scale Climate Signals: Application to the Karoon River Basin in Iran”, Proceedings of the 6th International Conference on Hydroinformatics - Liong, Phoon & Babovic (eds), (2004).
- Zahraie, B. and M. Karamouz, "Seasonal Precipitation Prediction Using Large Scale Climate Signals", Proceedings of EWRI- 2004 Conference, Salt lake City, USA, 2004.
- Zahraie, B., Karamouz M, Kerachian R, Asadzadeh M and N Saba, “Evaluation of Water Sector Performance: A Case Study, Proceedings of World Water and Environmental Resources Congress, Anchorage, USA, 2005.
- Karamouz M, M. R. Tabari M, Kerachian R and B Zahraei, “Conjunction Use of Surface and Groundwater Resources with Emphasis on Water Quality”, Proceedings of World Water and Environmental Resources Congress, Anchorage, USA, 2005.
- Karamouz, M., B. Zahraie, E. Fatahi, E. Mirzaie, F. Ramezani, R. Hashemi, (2005), “Predictors for Long-Lead Precipitation Forecasting in Western Iran”, Proceedings of the First Iran-Korea Joint Workshop on Climate Modeling, Mashhad, Iran.
- Zahraie, B., M. Karamouz, A. Eslami, R. Kerachian (2006), “GA model Model for Crop Pattern and Conjunctive Use Management in Varamin Plain in Iran”, Proceedings of 7th ICCE Conference, Tehran, Iran.
- Zahraie, B., S. M. Hosseini (2006), “Incorporating Agricultural Water Demand Variability in Reservoir Operation Optimization”, Proceedings of the Conference on “An International Perspective on Environmental and Water Resources 2006”, ASCE, India.
- Zahraie, B., F. Abdi, R. Kerachian, S. M. Niksokhan (2006), “Reservoir Operation Optimization: An Adaptive Management Approach”, Proceedings of the Conference on “An International Perspective on Environmental and Water Resources 2006”, ASCE, India.
- Roozbahani, A., B. Zahraie (2007), “Climate Signal Clustering for Precipitation Forecasting: Comparison between Genetic Algorithm-based and K-Means Clustering Methods”, Proceedings of the AIH Annual Meeting and the International Conference on “Integrated Watershed Management: Partnership in Science, Technology, and Planning, April 22-25, Reno, Nevada.
- Zahraie, B. and Roozbahani, A. (2007), “Climate Signal Clustering Using Genetic Algorithm for Precipitation Forecasting: A Case Study of Southeast of Iran”, Proceedings of World Environmental and Water Resources Congress, Tama, Florida.
- Zahraie, B. (2007), “Framework of a Decision Support System for Sustainable Water Resources Management in Urban Areas”, Proceedings of the International Workshop on Water Demand Management in Urban areas in light of tourism, 27-28 August, Muscat.

- Karamouz, M., B. Zahraie, R. Kerachian, and N. Mahjouri (2007), “Industrial Solid Waste Management in the Southern Part of Iran: Application of a New Master Plan”, Proceedings of SECOTOX Conference and the International Conference on Environmental Management, Engineering, Planning and Economics, June 24-28, Skiathos Island, Greece.
- Zahraie, B., Abdi, F., Kerachian, R., Malekmohammadi, B. (2007) “Reservoir Operation Optimization Using Adaptive Varying Chromosome Length Genetic Algorithm”, Proceedings of the International Conference on Water Management and Technology Applications in Developing Countries, 14-16 May, Kuala Lumpur Convention Centre, Malaysia.
- Malekmohammadi, B., Zahraie, B., Kerachian, R. (2008) “Flood Damage estimation approach for supporting operation optimization model in River-Reservoir Systems”, IWA World Water Congress and Exhibition, 7-12 September, Vienna.
- Malekmohammadi, B., Zahraie, B., Kerachian, R. (2008), “Multi-Objective VLGA Model for Flood Control and Water Supply Management in a Cascade System of Reservoirs”, Proceedings of EWRI World Environmental & Water Resources Congress, 12-16 May, Hawaii.
- Zahraie, B., C. Lucas, F. Nematizadeh (2008), “Stochastic VLGA Model for Operation Optimization of Cascade Reservoirs”, Proceedings of EWRI World Environmental & Water Resources Congress, 12-16 May, Hawaii.
- Zahraie, B., M. Fooladgar, A. Shanehsaz, A. Roozbahani (2008), “Framework of a Decision Support System for Basin-Scale Sustainable Water Supply and Demand Management”, Proceedings of EWRI World Environmental & Water Resources Congress, 12-16 May, Hawaii.
- Malekmohammadi, B., Zahraie, B., Kerachian, R. (2008) “Flood risk management in river-reservoir systems: Application of Fuzzy Inference Systems”, Proceedings of the RIVER FLOW 2008 Conference, 3-5 September, İzmir, Turkey.
- Tavakolan, M. and B. Zahraie (2008), “Application of Genetic Algorithms in Time-Cost Optimization in Construction Management”, Proceedings of the 4th National Civil Engineering Congress, University of Tehran, Tehran, Iran (Farsi).
- Zahraie, B. and A. Roozbahani (2008), “Development of the Framework of A Decision Support System for Sustainable Water Resources Management in Urban Areas”, Proceedings of the 4th National Civil Engineering Congress, University of Tehran, Tehran, Iran (Farsi).
- Malekmohammadi, B., R. Kerachian, B. Zahraie, and A. Ziaie (2008), “Development of Flood Damage Functions for Downstream of Cascade Systems of Reservoirs Based on the Upstream Flood Hydrographs”, Proceedings of the 4th National Civil Engineering Congress, University of Tehran, Tehran, Iran (Farsi).
- Zahraie, B., A. Roozbahani, J. Khanban, and A. Tootchi (2008), “A New Approach to Statistical Downscaling of GCM Climate Change Projections”, Proceedings of The First International Conference on Water Resources and Climate Change in the MENA Region, 2-4 November, Muscat, The Sultanate of Oman.
- Zahraie, B., A. Roozbahani, and A. Tootchi (2008), “Climate Change Adaptation: Moving Toward a New Curriculum for Hydro Infrastructure

Engineering”, Proceedings of the International Workshop on Water Resources in the Middle East – Reality and Aspiration, 19-21 October, Amman, Jordan.