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# RASOUL SARVESTAN

**EDUCATION**

Ph.D. in Geography – Urban Climatology               *SEPT. 2016 – SEPT. 2022*

*Hakim Sabzevari University, Sabzevar, Iran*

GPA: 19.12/20

Thesis Title: Forecasting and Simulation of Urban Floods based on Meteorology and Hydrologic Modelling for Collection and Directing of Surface Runoff

Supervisors*: Dr. Mokhtar Karami and Dr. Reza Javidi Sabbaghian*

Master of Science in Geography - Urban planning          *SEPT. 2013 – SEPT. 2015*

*Shahid Chamran University, Ahvaz, Iran*

GPA: 17.20/20

Thesis Title: Studying the role of citizens' participation in improving urban services and urban environment (a case study of Baghmolek)

Supervisors*: Dr.  Saeed Maliki and Dr. Majid Godarzi*

Bachelor of Science in Geography – Climatology          *SEPT. 2009 – MAR. 2013*

*Lorestan University, Khorramabad, Iran*

**AWARDS**

**AND**

**HONORS**

- Ranked **1st** GPA of in the Ph.D. program at the *Hakim Sabzevari University, Iran*
- The Distinguished researcher of 2020 in the Ph.D. program at the Department of Climatology, *Hakim Sabzevari University, Iran*
- Received the certificate of the best national demand-oriented doctoral thesis with the title " Forecasting and Simulation of Urban Floods based on Meteorology and Hydrologic Modelling for Collection and Directing of Surface Runoff " (2020).
- Received the certificate of supporting the doctoral thesis in Water and Regional Company of Khorasan Razavi, Mashhad, Iran (2019).
- Received the elite soldier's certificate titled "Study and review of rainfall forecasting models along with the development of models" from the National Foundation of National Elites in Regional Water Company  of Khorasan Razavi, Mashhad, Iran
- Ranked 82nd in the Entrance Exam of 2013, for the Master's the Ministry of Science, Research and Technology of Iran
- Ranked 18th in the Entrance Exam of 2016و in the Ph.D. the Ministry of Science, Research and Technology of Iran
- Membership and receiving a certificate in the National Elite Foundation of Iran
- Received full Scholarship from the Department of Climatology, *Hakim Sabzevari University, Iran* (Tuition waiver)

- Received full Scholarship from the *Shahid Chamran University, Iran* (Tuition waiver)
- Received full Scholarship from the *Lorestan University, Iran* (Tuition waiver)

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RESEARCH
INTERESTS

- Numerical modeling, flood forecasting and early warning, integration between meteorological, hydrological and hydraulic models, Climate change and climate scenarios, Creation/development of meteorological and hydrological models, machine learning in climatology and hydrology, Heat islands, Field measurement, big data

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PUBLICATIONS

**Journal Papers**

- Karami, M, Sarvestan, R, & Kleidorfer, M, 2025, "Forecasting and Simulation of Urban Floods Based on the Integration of RegCM and Stormwater Management Models", Water Resources Management, https://doi.org/10.1007/s11269-025-04133-6

- Zarei, M., Sarvestan, R, & Alavinia, SA. 2025. "Optimizing rain-gauge network design for enhanced estimate rainfall in ungauged plain and mountainous regions", Earth Science Informatics, https://doi.org/10.1007/s12145-025-01721-3

- Sarvestan, R, Zarei, M., 2025. "Identification of Rainfall Forecast Models for Effective Planning, and Sustainable Water Resource Management under Climate Change Conditions", Book chapter, Elsevier, Planning and Management for Sustainable Water Resources and Infrastructure under Climate Change (Accepted).

- Zarei, M., Soltanifard, H., & Sarvestan, R. (2025). Performance evaluation of global satellite products in simulating precipitation in urban areas of northeastern Iran. Natural Ecosystem Management, 16-29. doi:10.22034/emj.2025.2044583.1079 , (In Farsi)

- Sarvestan, R, Barati, B, Shamsipour, A, Khazaei, S & Kleidorfer, M, 2024, "Evaluation of the performance of satellite products and microphysical schemes with the aim of forecasting early flood warnings in arid and semi-arid regions (a case study of northeastern Iran)", Natural Hazards, https://doi.org/10.1007/s11069-024-06689-9

- Broomandi1, P, Galán Madruga, D, Gholamzade Ledari, D, Fathian, A, Janatian, Sarvestan, R, N, Satyanaga, A, Bagheri, M, Karaca1, F, & Ryeol Kim, J. 2024. "Evaluating Middle Eastern springtime dust events trending between 2011 and 2022: Air Quality, Atmosphere and Health, https://doi.org/10.1007/s11869-024-01510-9

- Galán Madruga, D, Broomandi, P, Jahanbakhshi, A, Bagheri, M, Fathian, A, Sarvestan, R, Cárdenas-Escudero, J Omar Cáceres, J, Satyanaga, A, Kumar, P, Ryeol Kim, J. 2023. "Estimating ambient PM2.5 particulate matter concentrations in the UK", Journal of Environmental Sciences, https://doi.org/10.1016/j.jes.2023.11.019.

- Sarvestan, R., Karami, M. & Sabbaghian, R.J., 2023, "Evaluation of Meteorological Microphysical Schemas based on the WRF Model for Simulation of Rainfall in the northeastern region of Iran", Journal of Hydrology: Regional Studies. https://doi.org/10.1016/j.ejrh.2023.101524

- Sarvestan, R., Karami, M. & Sabbaghian, R.J., 2023, "Spatial analysis and optimization of Raingauge stations network in urban catchment using Weather Research and forecasting model". Theoretical and Applied Climatology. https://doi.org/10.1007/s00704-023-04476-3

- Sarvestan, R., Karami, M. & Sabbaghian, R.J., 2022, "Assessment of the weather research and forecasting model in simulation of rainfall for Khorasan Razavi Province, Iran", *Arabian Journal of Geosciences* 15, 164. https://doi.org/10.1007/s12517-021-09215-4

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- Karami, M, Sarvestan, R., 2023. Locate solar panels using climate indices and GIS *(Case study: Khuzestan)*, Journal of Environmental Science and Technology (JEST), 24 (2), pp. 168-180. Doi.org/ 10.30495/JEST.2022.27496.3652. (In Farsi).

- Entezari, A., & Sarvestan, R., 2021. "Surveying and Predicting Surface Currents of Khuzestan Province Using Time Series Models". Journal of Environmental Science and Technology (JEST), 23(2), 147-160. doi:10.30495/jest.2021.29540.3822. (In Farsi).

- Karami, M., Sarvestan, R., & Sabouri, R., 2020. "Prediction of climate change effects on monthly flood runoff of Karun River using multiple linear model". *Watershed Engineering and Management, 12*(1), 44-56. doi:10.22092/ijwmse.2019.122256.1503. (In Farsi)

- Falah Qalhari, G., & Sarvestan, R., 2020. "Review and forecast of the phenomenon of dust in Khuzestan Province using Box-Jenkins time series model". *Watershed Engineering and Management, 12*(3), 608-620. doi:10.22092/ijwmse.2018.115726.1363. (In Farsi).

- Baaghideh, M. R., & Sarvestan, R., 2019. "Investigating the effect of climate parameters on the defensive performance of military forces (Case study: Khuzestan province)". *Scientific- Research Quarterly of Geographical Data (SEPEHR), 28*(110), 181-193. doi:10.22131/sepehr.2019.36622. (In Farsi).

- Falah Qalhari, G., Sarvestan, R., & Moradimajd, N., 2019. "Investigating the Effect of Morpho-Climatic Factors on Precision of SDSM Linear Multiplexing Model (Case Study: Omidieh and Dezful Stations)". *Environmental Researches, 10*(19), 271-280. (In Farsi).

- Falah Qalhari, G., Sarvestan, R., 2018., "Check the temperature data using statistical downscaling model during the period 2018-2099 (the study of Ahwaz, Abadan and Masjed Soleyman)". *Human & Environment*, 12 (2), 72-85. (In Farsi)

- Karami, M., Sarvestan, R., & Moradimajd, N., 2019. "Check the Phenomenon of Dust in Khuzestan Province Using Decision Models CHAID and CRT". *Environmental Researches, 9*(18), 129-142. (In Farsi).

- Entezari, A., & Sarvestan, R., 2018. "Dust and its prediction in cities of Khuzestan province using time series models". *Journal of Environmental Science Studies, 2*(4), 535-545. (In Farsi).

- Falah Qalhari, G. A., & Sarvestan, R., 2017. "Investigation and Identification of the Most Important Meteorological Parameters Affecting Climate Change (Case Study of Ahvaz City)". *Journal of Environmental Science Studies, 2*(2), 397-414. (In Farsi).

- Karami, K, Sarvestan, R., & Mansourzadeh, A. 2017, "Examining The Evolution Of The Khuzestan Urban Population Using The Urban Primacy Indexes", International Journal of Scientific & Technology Research, 6 (12), 17-22. https://www.ijstr.org/paper-references.php?ref=IJSTR-1117-18153

- Maleki, S., & Sarvestan, R., 2016. "Participation assessment of citizens in environmental and services urban areas Baghmalek". *Urban Management Studies, 8*(25), 26-38.

- Maleki, S., & Sarvestan, R., 2016, "Safety Assessment of Ilam and Providing Defensive Strategies from the Perspective of Civil Defense". *Passive Defense Quarterly, 7*(3), 47-56. https://pd.ihu.ac.ir/article_200699.html

- Maleki, S, Godarzi, M, Sarvestan, R, 2016, "The Geological Study of the Role of Citizens' Participation in Improvement of Municipal Services and Environment (Case Study: Urban Area of BaghMalek in Khuzestan Province of Iran)", Open Journal of Geology, 60(16). 1178-1195. DOI: 10.4236/ojg.2016.69087

- Maleki, S, Godarzi, M, Sarvestan, R, 2016. "Analysis of Citizen Participation in Improving Urban Services and the Urban Environment (Case Study: Baghmalek Urban Areas)", Journal of Applied Environmental and Biological Sciences. 6(11) 18 -87, https://www.textroad.com/pdf/JAEBS/J.%20Appl.%20Environ.%20Biol.%20Sci.,%206(11)81-87,%202016.pdf
- Maleki, S, Sarvestan, R., & Mansourzadeh, A. 2016, "Environmental impact evaluation and forecast of dust in the cities of Khuzestan province using time series models (during the statistical period of (1990-2010)", International Journal of Humanities and Cultural Studies (IJHCS), 3 (1), 2541-2561

### Manuscripts in under Review

- Sarvestan, R., Zarei, M. & Soltani Far, H., 2024. "Forecasting Urban Heat Islands by Establishing a Database for Tehran Metropolis: A Basis for Applying Boundary Layer Schemes in Urban Climate Management". Urban Climate (In under Review).
- Sarvestan, R., Karami, M. & Sabbaghian, R.J., 2024. "Evaluation of Meteorological and Hydrological Models Rainfall and Runoff in Surface Water Drainage Networks of Urban Areas". (In under Review).
- Sarvestan, R, Zarei, M & Alavinia, SA. 2024. "Coupling hydro meteorological, hydraulic, and remote sensing models for flood forecasting and estimating potential damages in arid and semi-arid regions". (In under Review).
- Seyed Omid Reza Shobairi, Sun Lingxiao, Zhang Haiyan, Li Chunlan, He Jing1, Rasoul Sarvestan, Behnam Asghari Beirami, Qirghizbek Ayombekov, Ireneusz Malik1, Malgorzata Wistuba, Ewa Łupikasza, Yu Yang, Q, 2023, "Modeling of Climatic Parameters on Flood Damage Performance on Vegetation using Response Surface Methodology and Satellite Images; Case Study Bayanbulak Natural World Heritage Site, China", Journal of Flood Risk Management, (In Under Review).

### Manuscripts in preparation

- Sarvestan, R, Zarei, Z, Hosseini, H., 2025. prediction of Heatwave Intensity Using a Combined WRF and ML Approach for Areas without Ground Stations in the Tehran Metropolitan ". (In Preparing).
- Sarvestan, R, Zarei, Z, Hosseini, H., 2025. Flood risk assessment for the years 2025 to 2070 under climate change scenarios and ML for the Metropolitan City of Tehran". (In Preparing).
- Sarvestan, R., Karami, M. & Sabbaghian, R.J., 2025. "Simulation Floods and Urban Surface Water Collection Networks Based on EPA_SWMM Hydrological Model (Case Study: Sabzevar Urban Area 2)". (In Preparing).

### Conference Papers

- Zarei, M, Behnam Talab, A & Sarvestan, R, 2023. "Flood zoning in the Atrak River in Shirvan city for the return period". The fourth international conference and the seventh national conference on the protection of natural resources and environment along with the fifth national conference of Iran's forest, Tehran, Iran, https://civilica.com/doc/1956885
- Sarvestan, R, Khazaei, S & Barati, R, 2022. "The performance of the integrated meteorological model system in order to forecast rainfall (case study: Kashafrood catchment)". Conference:

National Conference on Applied Solutions for Technical Issues in Water Balance Estimation, Tehran, Iran,

- Karmi, M, Abbaszadeh, F & Sarvestan, R, 2017. "Studying the temporal and spatial changes of average rainfall in the Karun basin". The 7th National Conference on Sustainable Development in Geography and Planning Sciences, Architecture and urban planning, Tehran, Iran, https://civilica.com/doc/872885.

- Firouzi, M & Sarvestan, R, 2014, "The role of the Emanism School in the environmental field". The 3rd national environment conference, Energy and Biodefense, Tehran, Iran https://civilica.com/doc/402105

- Sajjadian, N, Sarvestan, R & Sargoli, A, 2014. "An analysis of healthy cities with a sustainable development approach". The 3rd national conference on environment, energy and biodefense, Tehran, Iran. https://civilica.com/doc/402276

- Amanpour, S & Sarvestan, R, 2013. "Investigation and analysis of the state of natural resources and its impact on the cities of the Islamic world", the first national conference on sustainable development in the sciences of geography and planning, architecture and urban planning, Tehran, Iran, https://civilica.com/doc/336767.

- Safaipour, M & Sarvestan, R, 2013. " Investigating the situation of the dust phenomenon, a case study of Ahvaz city", the first national conference on sustainable development in the sciences of geography and planning, architecture and urban planning, Tehran, Iran https://civilica.com/doc/336768

- Amanpour, S & Sarvestan, R, 2013. "Determining the degree of development of the cities of Khuzestan province in terms of major activity groups using entropy and TOPSIS multi-indicator decision making models". International Conference on Sustainable Development, Solutions and challenges focusing on agriculture, natural resources, environment and tourism, Tabriz, Iran, https://civilica.com/doc/355432

- Safaipour, M & Sarvestan, R, 2013. "Prioritization of urban parks using TOPSIS and SAW multi-indicator decision-making methods, case study: Baghmolek city", International conference on sustainable development, solutions and challenges centered on agriculture. Natural resources, environment and tourism, Tabriz, Iran, https://civilica.com/doc/355533

**Lectures**

- Sarvestan, R., Khazaei, S., Barati, R., Farhi, N. and Sabourkazran, H., 2023, "Performance of integrated meteorological model system for rainfall forecasting (case study: Kashf-Roud watershed)", The 21st Iran Hydraulics Conference, Shahid University Chamran Ahvaz, Iran

- Karami, M & Sarvestan, R, 2018. "Evaluation of the effect of climate change on the runoff of the Dez Dam catchment area using hydrological and meteorological models". The first national conference on adaptation strategies to water deficit in arid and semi-arid regions, Sabzevar, Iran, https://civilica.com/doc/977393

- Karami, M, Sarvestan, R & Hasanzada, M, 2018. "Investigating the temporal and spatial distribution of dusty days in Khuzestan province". The first international conference and the fourth national conference on protection of natural resources and environment, Ardabil, Iran, https://civilica.com/doc/961467

**Academic Projects**

- Zarei, M., Ahsan, B, & Sarvestan, R. 2025, "Study and investigation of groundwater storage changes using remote sensing in North Khorasan Province", Between Regional Water Company of North Khorasan and *Hakim Sabzevari University, Iran*

- Zarei, M., Ahsan, B, & Sarvestan, R. 2024, "Zoning of floods in the rivers of North Khorasan province)", Between Regional Water Company of North Khorasan and *Hakim Sabzevari University, Iran*

- Karami, M. & Sabbaghian, R.J, Sarvestan, R, Rostami Khalaj, M, Fereshtapour, M, 2024, "Flood simulation and flood risk zoning in cities (case study: Sabzevar city)", *Hakim Sabzevari University, Iran*

- Sarvestan, R., & Alavinia, M, 2022, "Development of real-time flood forecasting system with meteorology, hydrology, and hydraulic approach (case study of Kashf-Roud watershed)", *Arid Environments Research Center, Islamic Azad University of Mashhad, Iran*

- Sarvestan, R., & Alavinia, M, 2021, "Study and review of rainfall forecast models along with model development", National Elite Foundation of Iran & Regional Water Company of Khorasan Razavi, Iran

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**Work Experience**

*Industry experience*

- Rainfall forecasting expert and elite soldier, Regional Water Company of Khorasan Razavi, Iran

*20019-2021*

*Responsibilities*

- Filed Work
- Meteorological Reports

*Academic experience*

**Teaching Experiences**

Lecturer, *Hakim Sabzevari University,* **Sabzevar, Iran**                    *2019- 2021*

- **Courses at the Department Climatology**
    Climate modeling
    Hydrological modeling
    Spatial statistics in climatology

- **Thesis Advisor**
    - Abbaszadeh, 2020," Investigating temporal and spatial changes of average rainfall in Karun basin", *Hakim Sabzevari University*, Iran (Master Thesis)

    *Supervisors: Dr.* Karami, M.

    *Advisor: Sarvestan, R*

    - *Hasanzada, 2021, "Investigating the temporal and spatial distribution of dusty days in Khuzestan province", Hakim Sabzevari University*, Iran (Master Thesis)

    *Supervisors: Dr. Karami, M.*

    *Advisor: Sarvestan, R*

    - *Talibi, 2020., "Determining the best time series models in forecasting the rainfall of selected stations of the Karun River", Hakim Sabzevari University*, Iran (Master Thesis)

    *Supervisors: Dr. Karami, M.*

SKILLS

**Applied Software**

- WRF, RegCM, Grads
- SDSM, LARS-WG, Climate Models
- HEC-RAS, SWMM, SWAT, HEC-HMS
- QGIS, GIS, GIS Water
- R, Python, Google Earth Engine, ML
- SPSS, Minitab

REFERENCE

- Dr Saeed Maleki, Professor in Geography & Urban Planning, Shahid Chamran University of Ahvaz, Ahvaz-Iran
  malekis@scu.ac.ir, saeedmale@gmail.com
- Dr Mokhtar Karami, Associate Professor , Department of Climatology, Faculty of Geography & Environmental Sciences, Hakim Sabzevari University, Sabzevar, Iran.
  m.karami08@yahoo.co.uk
- Dr. Manfred Kleidorfer, Dean of studies, Professor of Sustainable Urban Water Infrastructure, Innsbruck, Austria
  Manfred.Kleidorfer@uibk.ac.at

Data,    12 May 2025