

# Curriculum Vitae

## Vahid Moosavi, Ph.D.

---



### **Personal Information:**

**Name:** Vahid Moosavi

**Place and Date of Birth:** Shahrood, Iran, April 07, 1987

**Address:** Department of Watershed Management Engineering,  
Faculty of Natural Resources,  
Tarbiat Modares University (TMU),  
Tehran, Iran

**Position:** Assistant Professor

**Phone No.:** +98 11 44998121

**Fax No.:** +98 11 44998121

**E-mail address:** [v.moosavi@modares.ac.ir](mailto:v.moosavi@modares.ac.ir)  
[moosavi\\_v66@yahoo.com](mailto:moosavi_v66@yahoo.com)

### **Education:**

**B.Sc.:** Watershed Management Engineering, Shiraz University, Iran, August 2010.

**M.Sc.:** Watershed Management Engineering, Tarbiat Modares University (TMU), Iran, August 2012.

#### **Dissertation title:**

Application of Object Oriented and Pixel-Based Remote sensing methods in Studying Barchans.

**Ph.D.:** Physical Chemistry, Ferdowsi University of Mashhad, Iran, July 2009.

#### **Dissertation title:**

Aquifer Recharge Modeling in Semi-arid Areas (Combining Water Balance and Richards Equations)

**Work Experience:****Yazd University, Iran**

Graduate Teaching Assistant, 2015-2017

**Ardakan University, Iran**

Teaching, 2027-2019

**Tarbiat Modares University (TMU), Iran**

Teaching, 2019- Present

**Areas of Research Interest:**

- Surface and ground water resources modeling
- Remote Sensing
- Groundwater hydrology
- Application of modern science and techniques in hydrological studies of watersheds

**Research Projects:**

- ✓ Estimating Groundwater recharge using SWAT model. Energy ministry, Iran.
- ✓ Assessing TRMM and SEBS-based evapotranspiration estimates. Energy ministry, Iran.
- ✓ National plan for locating areas prone to dust production in Iran. Department of Environment, Iran.
- ✓ Health Atlas of Pishkoh watershed, Taft city, Yazd province. General Department of Natural Resources and Watershed, Yazd, Iran.

**Teaching Experience:**

Remote sensing and GIS, System analysis,

**Professional Training:**

1. MATLAB Software Training, Mashhad, Iran (2003).
2. Molecular Dynamics Simulation, Esfahan, Iran (2005).
3. AFM and STM Microscopes, Mashhad (2005).

4. Assessment and Evaluation of Laboratory Safety Systems to Confirm to the Requirements of ISO 17000 (2007).
5. Molecular Modeling & Simulation in Nanotechnology, Basic and Advanced (2010).
6. Artificial Neural Networks (2011).
7. Design and Analysis of Experiments (2011).

### **Membership in Professional Organizations:**

1. Iranian Watershed Management Society
2. Iranian Hydrology Society

### **Honors and Awards:**

1. Distinguished student in B. S. period (2010).
2. Distinguished student in M. S. period (2012).
3. Member of Iranian Elites Foundation.

### **REFERREE FOR JOURNAL ARTICLE SUBMITTED TO:**

1. Remote sensing of environment, Elsevier
2. Journal of hydrology, Elsevier
3. Water, MDPI
4. Geomorphology, Elsevier
5. Land Use Policy, Elsevier
6. Environmental Management, Springer

7. International Journal of Environmental Resources Research, Gorgan University, Iran Catena, Elsevier
8. Environmental Monitoring and Assessment, Springer
9. Science of the Total Environment, Elsevier
10. Ecological Indicators, Elsevier
11. Journal Agricultural Science and Technology Journal, Ferdowsi University of Mashhad, Iran
12. Journal of Natural Resources, University of Tehran, Iran
13. Journal of Pazhoresh and Sazandegi, Iran
14. Journal of Water Resources Researches, Iran
15. Journal of Watershed Management Science and Engineering, Iran
16. Journal of Soil and Water Conservation, Iran
17. Physical Geography Research Quarterly, Institute of Geography, University of Tehran, Iran
18. ECOPERSIA, Tarbiat Modares University, Iran

### **Supervised and Advised thesis:**

#### **MSc:**

1. **Zeinab Gheisoorifard**, Optimization and Determination of the Effect of Input Data, Model Type, Pre-processing and Data Length on the Accuracy of Daily Runoff Prediction using Some Data Driven Models.
2. **Forough Ahmadinejad Baghban**, Spatiotemporal Downscaling of Satellite Imagery to Estimate Land Surface Temperature in Watershed Scale.
3. **Sahar Mostafaei**, Daily Runoff Forecasting by Assessing Different Deep Learning and Signal Processing Blending Approaches.

4. **Golnaz Zuravand**, Soil Moisture Modeling using Deep Learning and Optimization Methods with Global and Local Approaches.
5. **Maryam Naghdi**, Evaluation of SRM Model in Snowmelt Runoff Simulation using Daily Minimum and Maximum Air Temperature Derived from MODIS Land Surface Temperature Products.
6. **Mohammad Tavoosi**, Evaluation of SWAT Model in Runoff Simulation using Daily Minimum and Maximum Air Temperature Derived from MODIS Land Surface Temperature Products and Daily Rainfall from TRMM Data.
7. **Fatemeh Daechini**, Impacts of Dam Construction on Indicators of Hydrologic Alterations in the Gorganroud Watershed.
8. **Fariba Esmaeili**, Effect Assessment of Spatial Resolution of Digital Elevation Models on the Efficiency of Five Unit Hydrograph Models.
9. **Foruzan Manavinia**, Land Use Effect on Spatial and Temporal Variations of Surface and Groundwater Resources Quantity in Talesh Karganrood Watershed.
10. **Abotaleb Kahrizi**, Investigating the Relationship between Extraterrestrial Climate Change with Temporal and Spatial Variations of Dust Storms in West of Iran.

### **PhD:**

1. **Zahra Nasiri**, Assessing Coupling Coordination Degree of Watershed Activities.
2. **Ehsan Zahedi**, Planning a Dynamic Model to Allocate Water Resources and Determine the Superior Strategies

### **Publications:**

#### **a) Papers:**

1. **Vahid Moosavi**, Ayoob Karamim Ramyar Aliramaee. 2023. High-resolution soil moisture mapping using PSO-based optimized cerebellar model articulation controller (CMAC). *Science of the Total Environment*, 857, 159493.
2. **Vahid Moosavi**, Zeinab Gheisoori Fard, Mehdi Vafakhah. 2022. Which one is more important in daily runoff forecasting using data driven models: Input data, model type, preprocessing or data length? *Journal of Hydrology*, 606, 127429.

3. **Vahid Moosavi**, Ayoob Karami, Negin Behnia, Ronny Berndtsson, Christian Massari. 2022. Linking Hydro-Physical Variables and Landscape Metrics using Advanced Data Mining for Stream-Flow Prediction. *Water Resources Management*, 36 (11), 4255-4273.
4. **Vahid Moosavi**, Seyed Hamidreza Sadeghi, 2021. Modeling and optimization of experimental designs for soil loss assessment at plot scale. *Journal of Hydrology*, 592: 125806.
5. **Vahid Moosavi**, Javad Mahjoobi, Mehdi Hayatzadeh. 2021. Combining group method of data handling with signal processing approaches to improve accuracy of groundwater level modeling. *Natural Resources Research* 30, 1735-1754
6. **Vahid Moosavi**, Ali Talebi, Mohammad Hossein Mokhtari, Seyed Rashid Fallah Shamsi, Yaghoob Niazi. 2015. A Wavelet-Artificial Intelligence Fusion Approach (WAIFA) for Blending Landsat and MODIS Surface Temperature. *Remote Sensing of Environment*, 169: 243-254.
7. **Vahid Moosavi**, Yaghoob Niazi. 2016. Development of Hybrid Wavelet Packet-Statistical Models (WP-SM) for Landslide Susceptibility Mapping. *Landslides*, 13(1): 97-114.
8. **Vahid Moosavi**, Hosein Malekinejad, Bagher Shirmohammadi, 2014, Fractional Snow Cover Mapping from MODIS Data Using Wavelet-Artificial Intelligence Hybrid Models. *Journal of hydrology*, 511: 160–170.
9. **Vahid Moosavi**, Ali Talebi, Bagher Shirmohammadi, 2014, Producing Landslide Inventory Map using Pixel Based and Object Oriented Approaches Optimized by Taguchi Method, *Geomorphology*, 204: 646-656.

10. **Vahid Moosavi**, Hamidreza Moradi, Seyed Rashid Fallah Shamsi, Bagher Shirmohammadi, 2014, Assessment of the Planimetric Morphology of Barchan Dunes. *CATENA*, 120: 12-19.
11. Hamidreza Sadeghi, **Vahid Moosavi**, Ayoob Karami, Negin Behnia. 2012, Soil erosion assessment and prioritization of affecting factors at plot scale using the Taguchi method. *Journal of Hydrology*, 448–449:174–180.
12. **Vahid Moosavi**, Ali Talebi, Mohammad Reza Hadian. 2016. Development of a Hybrid Wavelet Packet-Group Method of Data Handling (WPGMDH) Model for Runoff Forecasting. *Water Resources Management*, doi: 10.1007/s11269-016-1507-3.
13. **Vahid Moosavi**, Mehdi Vafakhah, Bagher Shirmohammadi, Negin Behnia. 2013. A Wavelet-ANFIS Hybrid Model for Groundwater Level Forecasting for Different Prediction Periods. *Water Resources Management*, 27:1301–1321.
14. Bagher Shirmohammadi, Mehdi Vafakhah, **Vahid Moosavi**, Alireza Moghaddamnia. 2012. Application of Several Data-Driven Techniques for Predicting Groundwater Level. *Water Resources Management*, 27:419–432.
15. **Vahid Moosavi**, Ali Talebi, Mohammad Hossein Mokhtari, Mohammad Reza Hadian. 2016. Estimation of Spatially Enhanced Soil Moisture Combining Remote Sensing and Artificial Intelligence Approaches. *International journal of remote sensing*, 37(23): 5605-5631.
16. Yousef Erfanifard, Negin Behnia, **Vahid Moosavi**. 2014. Tree crown delineation on UltraCam-D aerial imagery with SVM classification technique optimized by Taguchi method in Zagros woodlands. *International Journal of Image and Data Fusion*, 5:4, 300-314.
17. **Vahid Moosavi**, Seyed Rashid Fallah Shamsi, Hamidreza Moradi, Bagher Shirmohammady, 2014, Application of Taguchi method to satellite image fusion for object-oriented mapping of Barchan dunes, *Geosciences journal*, 18(1): 45-59.

18. Bagher Shirmohammadi, Hamidreza Moradi, **Vahid Moosavi**, Majid Taie Semiromi, Ali Zeinali. 2013. Forecasting of meteorological drought using Wavelet-ANFIS hybrid model for different time steps (case study: southeastern part of east Azerbaijan province, Iran). *Natural Hazards*, 69:389–402.
19. **Vahid Moosavi**, Mehdi Vafakhah, Bagher Shirmohammadi, Maryam Ranjbar, 2012, Optimization of Wavelet-ANFIS and Wavelet-ANN Hybrid Models by Taguchi Method for Groundwater Level Forecasting, *The Arabian Journal for Science and Engineering*, DOI 10.1007/s13369-013-0762-3.
20. Ayoob Karami, Asadollah Khorani, Seyed Rashid Fallah Shamsi, **Vahid Moosavi**. Gully Erosion Mapping Using Object-Based and Pixel Based Image Classification Methods. *Environmental & Engineering Geoscience*, DOI: 10.2113/gseegeosci.21.2.101.
21. Ali Talebi, Javad Mahjoobi, Mohammad Taghi Dastorani, **Vahid Moosavi**. 2017. Estimation of suspended sediment load using regression trees and model trees approaches (Case study: Hyderabad drainage basin in Iran). *ISH Journal of Hydraulic Engineering*. DOI: 10.1080/09715010.2016.1264894.
22. Hamidreza Sadeghi, Mehdi Vafakhah, **Vahid Moosavi**, Sanaz Pourfallah Asadabadi, ... 2022. Assessing the health and ecological security of a human induced watershed in central iran. *Ecosystem Health and Sustainability* 8 (1), 2090447.
23. Mehdi Hayatzadeh, **Vahid Moosavi**, Ramyar Aliramaee. 2022. Assessment and prioritization of soil erosion triggering factors using analytical hierarchy process and Taguchi method. *International Journal of Sediment Research*. <https://doi.org/10.1016/j.ijsrc.2022.11.002>.
24. Negin Behnia, Mohammad Zare, **Vahid Moosavi**, Seyed Jammaladin Khajeddin. 2022. An inter-comparison of different PSO-optimized artificial intelligence



- algorithms for thermal-based soil moisture retrieval. *Earth Science Informatics* 15 (1), 473-484.
25. Maryam Zarei, Mahdi Tazeh, **Vahid Moosavi**, Saeideh Kalantari. 2021. Investigating the Capability of Thermal-Moisture Indices Extracted from MODIS Data in Classification and Trend in Wetlands. *Journal of the Indian Society of Remote Sensing* 49, 2583-2596.
  26. Omid Rahmati, Davoud Davoudi Moghaddam, **Vahid Moosavi**, Zahra Kalantari, Mahmood Samadi, Saro Lee, Dieu Tien Bui. 2019. An automated python language-based tool for creating absence samples in groundwater potential mapping. *Remote Sensing* 11 (11), 1375.
  27. Seyed Mostafa Mirzadeh, Farhad Nejadkoorki, SA Mirhoseini, **Vahid Moosavi**. 2022. Developing a wavelet-AI hybrid model for short- and long-term predictions of the pollutant concentration of particulate matter<sup>10</sup>. *International Journal of Environmental Science and Technology*, 1-14.
  28. Forough Ahmadinezhad Baghban, **Vahid Moosavi**. 2022. Convolutional Neural Networks (CNN)-Signal Processing Combination for Daily Runoff Forecasting. *ECOPERSIA* 10 (3), 231-243.
  29. **Vahid Moosavi**, Mehdi Hayatzadeh. 2022. Groundwater recharge modeling using semi-distributed SWAT Model, case study: Marvast Plain. (In persian). *Watershed Engineering and Management* 14 (3), 282-298.
  30. Shima Shahbazi Manshadi, Kazem Kamali Aliabad, **Vahid Moosavi**, Ali Tajabadipour. 2022. Using Taguchi as a New Method to Optimization of Nutritional Requirement of Pistachio (*Pistacia vera*). *Agricultural Research* 11 (1), 95-103.
  31. H Hekmatnia, F Barzegari Banadkooki, **Vahid Moosavi**, A Zare Chahouki. 2021. Evaluation of groundwater suitability for drinking, irrigation, and industrial purposes (Case study: Yazd-Ardakan Aquifer, Yazd Province, Iran). *ECOPERSIA* 9 (1), 11-21.
  32. Seyed Mostafa Mirzadeh, Farhad Nejadkoorki, **Vahid Moosavi**, SA Mirhoseini. 2021. Comparison of the accuracy of the support vector regression model with two

- common methods of artificial neural network and adaptive neuro-fuzzy inference system in predicting. *Journal of Natural Environment* 74 (1), 167-179.
33. Mehdi Hayatzadeh, Ali Fathzadeh, **Vahid Moosavi**. 2019. Improving the Accuracy of Land Use/Cover Maps using an Optimization Technique. *ECOPERSIA* 7 (4), 183-193.
  34. Mohammad Hossein Mokhtari, Kaveh Deilami, **Vahid Moosavi**. 2020. Spectral enhancement of Landsat OLI images by using Hyperion data: a comparison between multilayer perceptron and radial basis function networks. *Earth Science Informatics* 13, 493-507.
  35. Fatemeh Daechini, Mehdi Vafakhah, **Vahid Moosavi**. Mostafa Zabihi Silabi, 2022. Performance Assessment of Five Water Balance Models for Runoff Simulation in the Gorganroud Watershed. (In persian). *JWSS-Isfahan University of Technology* 26 (2), 263-281.
  36. Fatemeh Daechini, Mehdi Vafakhah, **Vahid Moosavi**. 2022. Impacts of Dam Construction on Indicators of Hydrologic Alterations in the Gorganroud Watershed. (In persian). *Iranian journal of Ecohydrology*. 9 (1), 185-198.
  37. **Vahid Moosavi**, Mehdi Hayatzadeh, Ayoob Karami, Nayereh Poormolae. 2021. A system approach toward comprehensive analysis of the vulnerability of Yazd-Ardakan plain environment; challenges and solutions. (In persian). *Environmental Sciences* 19 (4), 249-268.
  38. Negin Behnia, Mohammad Zare, **Vahid Moosavi**, Seyed Jamaladdin Khajeddin. 2020. Evaluation of a Hierarchical Classification Method and Statistical Comparison with Pixel-Based and Object-Oriented Approaches. *ECOPERSIA* 8 (4), 209-219.
  39. Fatemeh Daechini, Mehdi Vafakhah, **Vahid Moosavi**. Mostafa Zabihi Silabi, 2022. (In persian). *Iranian journal of Ecohydrology* 8 (3), 677-690.
  40. Maryam Zarei, Mahdi Tazeh, **Vahid Moosavi**, Saeideh Kalantari. 2021. Evaluating the changes in Gavkhuni Wetland using MODIS satellite images in 2000-2016. (In persian). *Journal of Nature and Spatial Sciences (JONASS)*. 1 (1), 27-41.

41. Fatemeh Daechini, Mehdi Vafakhah, **Vahid Moosavi**. 2020. Impacts of the Golestan and Voshmgir Dams on Indicators of Hydrologic Alterations in the Gorganroud River Using Range of Variability Approach. (In persian). *Iranian journal of Ecohydrology* 7 (3), 595-607.

**b) Books:**

**Vahid Moosavi**. 2018. Prediction of Rainfall as One of the Main Variables in Several Natural Disasters. Chapter of the book “*Natural Hazards GIS-based Spatial Modeling Using Data Mining Techniques*”. Springer.

**Interests:**

Literature, sport, walking, watching the nature, and reading Persian poems.