UNIVERSITÀ DEGLI STUDI DI MILANO

TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 6483**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Dipartimento di Scienze Agrarie e Ambientali - Produzione, Territorio, Agroenergia**

Scientist- in – charge: **Prof. Daniele Masseroni**

[Afshin Jahanshahi]

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Jahanshahi
Name	Afshin

PRESENT OCCUPATION

Appointment	Structure
Hydrologist and GIS expert	WRI Consulting Engineers Company (Tehran, Iran)

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement
Bacelor of Science	Natural Resources Engineering – Range and Watershed Management	Azad University, Kerman, Iran	2007
Master of Science	Natural Resources Engineering - Watershed Management	University of Zabol, Zabol, Iran	2012
Ph.D.	Natural Resources Engineering - Watershed Management	Sari Agricultural sciences and Natural Resources University (SANRU)	2019
Sabbatiacl	Hydrological modeling and flood event analysis	UFZ (Germany)	2017

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
2007	Agricultural and Natural Resources Engineering Organization of Iran	Kerman
2008	Watershed Management Society of Iran	Karaj

FOREIGN LANGUAGES

Languages	level of knowledge
English	Advanced
Farsi	Native
German	A1

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2017	Scholarship from Iran's Ministry of science for a sabbatical in UFZ at Germany (6 months)
2019	Ranked 1nd GPA among the Ph.D. class in 2019 at SANRU
2014	Ranked 15nd among 944 participants in the National University Entrance Exam for Ph.D.
2012	Ranked 1nd GPA among the MSc. class in 2012 at University of Zabol
2007	Ranked 1nd GPA among the BSc. class in 2007 at Azad University
2012	Grant for short-term research from Iran's Agriculture and Natural Resources Organization
2011	Selected as an active member in research projects of Iran's Watershed Management Society
2011	Best Literary and Philosophical book critic Iran Young Researchers Association

TRAINING OR RESEARCH ACTIVITY

Ph.D. Period

- Analyzed hydrological extremes.
- Climate change impact assessment.
- Land use/land cover impact assessment using SWAT model.
- Applied machine learning for flood prediction.
- Satellite-based flood mapping.
- Compared hydrological modeling frameworks for simulating extreme events.
- Flood frequency analysis under climate change.

M.Sc. Period

- Utilized machine learning algorithms to catchment modeling.
- Investigated land use change impacts on streamflow dynamics.
- Implemented SWAT model for groundwater-surface water interactions.
- Analyzed remote sensing data for hydrological modeling and watershed management.
- Published research papers and presented findings at conferences.
- Investigated water management strategies for mitigating scarcity.
- Field working.

B.Sc. Period

- Conducted literature review on climate change impacts in hydrology.
- Developed hydrological model to simulate water balance.
- Installed and maintained hydrological monitoring equipment.

PROJECT ACTIVITY

Year	Project (WRI Consulting Engineers Company (Tehran, Iran))
2019	• **Study of climate change impact on hydro-climatic extremes:** My role: ○ Statistical downscaling of climate model outputs ○ Performed HBV model under future scenarios
2019	• **Runoff simulation under future climate change conditions:** My role: ○ Performed ANN and HBV models in four catchments.
2019	• **Flood detection in urban areas** My role: ○ Extracted flood areas from Sentinel-1 ○ Implemented RF model
2019	• **Hydrologic response to LULC change scenarios** My role: ○ Change detection using MODIS dataset ○ Implemented SWAT model
2019	• **Flood exposure analysis using Sentinel-1 images in southeast Iran:** My role: ○ Analyzed Sentinel-1 SAR intensity images in GEE environment
2018	• **Flood-prone area classification:** My role: ○ Conducted AI-based (K-means and SVM) method in four catchments
2018	• **Flood mapping in Kerman province:** My role: ○ Analyzed Landsat images in GEE environment
2017	• **Mapping homogeneous regions for flash floods:** My role: ○ Conducted Random Forest method ○ Conducted SOM method to regionalize flash floods in four catchments
2016	• **Climate change impact on hydro-climatic variables:** My role: ○ Employed SWAT model to simulate runoff in two catchments ○ Conducted trend analysis test
2015	• **Spatiotemporal variability of flood events in southern Iran:** My role: ○ Assessed climate controls on flood events in 14 catchments
2014	• **Flood vulnerability assessment in southeast Iran:** My role: ○ Supervised and collected data on 130 flood events. ○ Conducted flood vulnerability assessment using Fuzzy Logic method in GIS environment.
2014	• **Spatiotemporal patterns of hillslope erosion in Southeastern Iran:** My role: ○ Carried out fieldwork in 14 sub-catchments.

PUBLICATIONS

Books
Jahanshahi, A., Fatemi, S., and Maadi, B., 2015. Catchment modeling using HEC-GeoHMS and ArcHydro softwares. Agriculture and Natural Resources Research and Training Press, Iran, p 243. (In Persian)

Articles in reviews
Comparing of satellite-based and reanalysis precipitation products for hydrological modeling over a data-scarce region. Climate Dynamics, Springer (Germany), https://doi.org/10.1007/s00382-023-07078-x, 2024
A comparative assessment of decision tree algorithms for index of sediment connectivity modeling. Water Resources Management, Springer (Germany), https://doi.org/10.1007/s11269-024-03760-9, 2024
Flood process types and runoff coefficient variability in climatic regions of Iran. Volume 69, Issue 2. Hydrological Sciences Journal. Taylor & Francis (UK), https://doi.org/10.1080/02626667.2024.2302420, 2024
Exploring controls on rainfall-runoff events: Spatial dynamics of event runoff coefficients in 963 Iranian catchments. Hydrological Sciences Journal, Volume 68, Issue 7, Taylor & Francis (UK), https://doi.org/10.1080/02626667.2023.2193297, 2023
Identifying most relevant controls on spatial transfer of hydrologic parameters between gauged and ungauged catchments - A comprehensive study in Iran. Journal of Hydrology, Volume 612, Part B. Elsevier (Netherlands), https://doi:10.1016/j.jhydrol.2022.128193, 2022
Dependence of rainfall-runoff model transferability on climate conditions in Iran. Hydrological Sciences Journal. Volume 67, Issue 4. Taylor & Francis (UK), https://doi:10.1080/02626667.2022.2030867, 2021
Comparing spatial and temporal scales of hydrologic model parameter transfer: A guide to four climates of Iran. Volume 603, Part C. Netherlands, Journal of Hydrology. Elsevier (Netherlands), https://doi:10.1016/j.jhydrol.2021.127099, 2020
Streamflow simulation in ungauged catchments using the regionalization methods in Hamoun-Jazmourian river basin. Water and Soil Science, 32 (2), Tehran, (In Persian). https://www.authorea.com/doi/full/10.22541/au.159415468.87807598, 2022
Ensemble-based comprehensive assessment of future hydro-climatic extremes in Iranian catchments. Journal of Hydrology, Elsevier (Netherlands), (Under Review)
A data fusion approach to enhancing runoff simulation in a semi-arid river basin. Journal of Hydrology, Elsevier (Netherlands), (Under Review)
Evaluating the consistency of hydrological model transferability under changing climatic conditions in arid regions of Iran. Journal of Hydrology, Elsevier (Netherlands), (Under Review)
Impact of historical climate patterns on runoff using cross entropy methods in 963 Iranian catchments. Hydrological Sciences Journal, Taylor & Francis (UK), (Under Review)
Impact of calibration conditions on hydrological model transferability under different climatic conditions. Hydrological Sciences Journal, Taylor & Francis (UK), (Under Review)
Quantifying the relative contributions of rainfall and antecedent soil moisture to flood generation: Analysis of 963 Iranian catchments. Hydrological Processes, Wiley (UK), (Under Review)

OTHER INFORMATION

Teaching Experiences

Sari Agricultural Sciences and Natural Resources University (SANRU), Sari, Iran

- Changes in hydrological extremes in Iran
- Hydrological modeling, Machine Learning, and spatial data analysis in R
- Applied hydrology
- Climate and satellite data analysis in Google Earth Engine (GEE)
- Geostatistical interpolation in R
- ArcMap, QGIS, and ArcGIS Pro

Graduate Student's Co-vision (M.Sc.)

University of Zabol, Zabol, Iran

- The relationship between meteorological, hydrological and groundwater droughts at different time scales in Baft plain
- Estimation of flood hydrograph and flood hazard mapping using hydrological and hydraulic models in Halil river
- Effect of drought on groundwater resources quality in Khash plain using SPI index

Sari Agricultural Sciences and Natural Resources University (SANRU), Sari, Iran

- Investigation of groundwater quality and salinity using statistical and GIS techniques in Haraz plain.

Professional Activities

Journal Reviewing

- Journal of Watershed Management Research (https://jwmr.sanru.ac.ir/)
- Water and Soil Science (https://water-soil.tabrizu.ac.ir/)
- Desert (https://jdesert.ut.ac.ir/)
- Desert Ecosystem Engineering Journal (https://deej.kashanu.ac.ir/)

Courses & Workshop

- Machine Learning in R (14 hrs.)
- Using R for Hydrology data (20 hrs.)
- Using R for spatial data analysis (18 hrs.)
- QGIS and ArcGIS Pro applications in hydrology science (21 hrs.)
- Google Earth Engine (GEE) (40 hrs.)
- GPS and GIS (8 hrs.)
- Soil and Water Assessment Tools (SWAT) (12 hrs.)
- Writing scientific papers (3 hrs.)
- ArcGIS (30 hrs. theoretical and 80 hrs. practical)

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: ___Kerman, Iran____, ____03/11/2024_____