Mostafa Saghafi

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LinkedIn   Google Scholar   Researchgate   GitHub

Education

2018 - 2021

Master of Science in Water and Hydraulic Structure Engineering
Shahrood University of Technology, Iran (https://shahroodut.ac.ir/en/)
Thesis: "*Surface Water Body Detection and Flood Monitoring Using Fusion of Multiple Remote Sensing Data*"
Supervisor: Dr. Ahmad Ahmadi
                    Dr. Behnaz Bigdeli
GPA: 3.18/4
Thesis GPA: 4 / 4

2014 - 2018

Bachelor of Science in Civil Engineering
University of Gonabad, Iran
GPA: 3.45/4

International Publications

Goodarzi,M. Sabaghzadeh,M. Barzkar,A. Niazkar,M. **Saghafi,M.** (2024). "A comparison of Machine Learning Methods for Estimation of Snow Density Using Satellite Images". *Water and Environment Journal.* (https://doi.org/10.1111/wej.12939)

Saghafi, M., Ahmadi, A., & Bigdeli, B. (2021). "Sentinel-1 and Sentinel-2 data fusion system for surface water extraction". *Journal of Applied Remote Sensing*, *15*(1), 14521. (https://doi.org/10.1117/1.JRS.15.014521)

Esmaeilzadeh, A., Emamgholizadeh, S., Bigdeli, B,. & **Saghafi, M.** (2024) "Improvement on the effective snow cover extraction using fusion satellite images approach". *Journal of the Indian Society of Remote Sensing.* (under the second review)

Saghafi, M., Ahmadi, A., & Bigdeli, B. "Improving Flood Detection Accuracy: A Synergistic Approach Using Remote Sensing and Machine Learning." (In progress)

National Publications

 Saghafi, M., Ahmadi, A., & Bigdeli, B. (2021). "Detecting Surface Water Using Data Fusion of Optical and Radar Remote Sensing Sensor". *Journal of Watershed Management Science and Engineering.* (Link)

Saghafi, M., Ahmadi, A., & Bigdeli, B. (2021). "Detecting Surface Water Using Landsat-8 and Sentinel-2". *12th National Congress of Civil Engineering.* (Link)

Research and Work Experience

- **Research and teaching assistant at Shahrood University of Technology**
- *Research and Advisor task(s):*

    *1. **Ph.D. Thesis** " Distinguish Dry and Wet Snow Using Fusion of Multiple Remote Sensing Data time series (Study area: Tehran) "*
    *2. **Ph.D. Thesis** " An improved forest fire detection method based on the NBR index and BFAST Algorithm) "*
    *3. **Ph.D. Thesis** "Onset Prediction of HABs Using Threshold Indices and Application of Remote Sensing in Band Ratio Algorithms to Estimate Phycocyanin and Phosphorus Concentration (Case Study: Sherbrook Lake, Canada)"*
    *4. **M.Sc. Thesis** "Investigation of Alterations of Porphyry Molybdenum and Gold Deposits Using Landsat-8 and Sentinel-2 Images to Explore Porphyry Deposits"*
    *5. **M.Sc. Thesis** "Investigation of Water Level of Urmia Lake Using Fusion of Multiple Remote Sensing Data Time Series"*

6. M.Sc. Thesis " Earthquake Hazard Zoning Using Machine Learning and Decision Fusion (Study area: Tehran) "
7. M.Sc. Thesis " Estimation of Land Surface Temperature and Soil Moisture using SMOS and SMAP Satellite"

- *Teaching experience(s):*

  " Application of Remote Sensing" Shahrood University of Technology– Jan: May 2021
  " Lecturer of professional article writing and journal refereeing course" – 2021-2023

Honors and Certificates

Certificates
- Active reviewer of Journal of Applied Remote Sensing (SPEI.) (2022-2024)
- Attend and participate in Applications/ Limitations of AI and Machine Learning Water Research Foundation webinar (May 2021)
- Presenting the article orally in 12 National Civil Conferences.

Honors
- **Ranked 3rd** among 15 M.Sc. Student of Water and Hydraulic Structure at Shahrood University of Technology (2021).
- **Candidate** of the Best Researcher at Shahrood University of Technology (2021).
- The youngest advisor in the application of remote sensing at Shahrood University of Technology (2020-2021).
- Owner of a **YouTube channel** about the application of remote sensing.

Skills and Interests

Languages
- Farsi: Native
- Academic English: Professional working proficiency

Computer Skills
- Python (Regression, Machin learning, and Deep Learning) – Upper intermediate user
- R Programming language – Upper Intermediate user
- Google Earth Engine (GEE) – Intermediate user
- MATLAB - Intermediate user
- ENVI - Upper intermediate user
- SNAP-ESA – Upper intermediate user
- ArcGIS and QGIS – Intermediate user

Areas of expertise and interests
- Land Use and Land Cover (LULC)
- Time Series Analysis of Surface Water, Vegetation, and Flooded Areas
- Natural disaster zoning with machine learning
- Land subsidence detecting and monitoring
- Application of machine learning in climate changes
- Landsat data series, Sentinel-2, Sentinel-1, MODIS, SMOS, and SMAP products
- Supervised and Unsupervised Land Classification
- Data Fusion and Decision Fusion

Personal Interests
- Mountain climbing – Cycling - Swimming

References

- **Dr. Ahmad Ahmadi**, Associate Professor, Thesis Supervisor, Department of Civil Engineering, University of Shahrood, Iran (Email: a.ahmadi@shahroodut.ac.ir)
- **Dr. Behnaz Bigdeli**, Assistant Professor, Thesis Supervisor, Department of Photogrammetry and Remote Sensing, University of Shahrood, Iran (Email: bigdeli@shahroodut.ac.ir)

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