

Milad Hooshyar

Department of Civil, Environmental and Construction Engineering, University of Central Florida

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Google scholar: <https://scholar.google.com/citations?user=XR4C14IAAAAJ&hl=en>

Research Interests

- Surface water hydrology
- Surface processes
- Geomorphology
- Environmental remote sensing

Education

University of Central Florida (UCF)

Aug. 2012 – Present

- *PhD* in Civil Engineering.
- Advisor: Dr. Dingbao Wang, Dr. Stephen Medeiros

Amirkabir University of Technology (AUT)

Sep. 2008 – Feb. 2011

- *Master* in Civil Engineering
- Dissertation: “Stochastic Optimization of Reservoir Operation Using Reinforcement Learning”
- Advisor: Dr. Mousavi, Dr. Mahootchi.

Isfahan University of Technology

Sep. 2004 – July 2008

- *Bachelor* in Civil Engineering

Publications

Referred Papers

Published

- [1] **M. Hooshyar**, S. Kim, D. Wang, and S.C. Medeiros (2015), "Valley and channel networks extraction based on local topographic curvature and K-means clustering of contours." *Water Resources Research*, In Press, DOI: 10.1002/2015WR018479.
- [2] **M. Hooshyar** and D. Wang (2016), “An analytical solution of Richards’ equation providing the physical basis of SCS curve number method and its proportionality relationship.” *Water Resources Research*, 52(8), 6611-6620., DOI: 10.1002/2016WR018885
- [3] **M. Hooshyar**, S. Kim, D. Wang, and S.C. Medeiros (2015), “Wet channel network extraction by integrating LiDAR intensity and elevation data.” *Water Resources Research*, 51(12), 10029-10046, DOI: 10.1002/2015WR018021
- [4] K. Madani and **M. Hooshyar** (2015), “A game theory-reinforcement learning (GT-RL) method to develop optimal operation policies for multi-operator reservoir systems.” *Journal of Hydrology*, Volume 519, p. 732-742, DOI: 10.1016/j.jhydrol.2014.07.061
- [5] K. Madani, **M. Hooshyar**, S. Khatami, and A. Alaeipour (2014), “Nash-reinforcement learning (N-RL) for developing coordination strategies in non-transferable utility games.” 2014 IEEE International

Under Review/Ready to Submit

- [1] **M. Hooshyar**, S. Kim, and D. Wang, "Re-visiting the dependence of drainage density on climate and drainage area by LiDAR Data."
- [2] **M. Hooshyar**, D. Wang, and A. Singh, "Hydrologic controls on channel junction angles ".
- [3] Y. Tang, **M. Hooshyar**, T. Zhu, C. Ringler, A. Sun, D. Long, and D. Wang, "Reconstruct annual groundwater storage changes in a large-scale irrigation region by integrating GRACE data and Budyko model".
- [4] S. Tahsin, S. Medeiros, **M. Hooshyar**, and A. Singh, "Optical cloud pixel recovery via machine learning".

Under Preparation

- [1] **M. Hooshyar**, N. Alimohammadi, and D. Wang, "On the relationship between drainage density and drainage area".

Conference Presentations

- [1] "Providing the physical basis of SCS curve number method and its proportionality relationship from Richards' equation", AGU fall meeting, San Francisco, CA, 2016.
- [2] "Application of LiDAR data for wet channel network extraction", 1st Joint LiDAR Workshop by Florida Region – ASPRS, University of Florida and St. Johns River Water Management District, Apopka, FL, 2016.
- [3] "Wet channel network extraction based on LiDAR data", AGU fall meeting, San Francisco, CA, 2015.
- [4] "State and parameter estimation of 1-D hydrodynamics model using Kalman Filter", Young Coastal Scientists and Engineers Conference, University of Delaware, 2014.
- [5] "A Game Theory – Reinforcement Learning (RL-NH) method to develop operational policies based on coordination for non-transferable utility multi-reservoir multi-operator systems", EWRI, Portland, OR, 2014.
- [6] "Reinforcement Learning Based on Aggregation/ Decomposition: Karkhe Case Study" – 10th International Conference on Hydroinformatics (HIC), Germany, 2012.
- [7] "Conjunctive Management of Groundwater and Surface water During Drought: A Case Study", 4th International Perspective on Water Resources and the Environment (IPWE), Singapore, 2011.

Conference Posters

- [1] "State and parameter estimation of 1-D hydrodynamic model using dual EnKF", AGU fall meeting, San Francisco, CA, 2014.
- [2] "Reinforcement Learning - Linear Programming for Optimizing Hydropower Reservoir Systems", 22th Annual Southwest Florida Water Resources Conference-Water and Energy, Ft. Myers, FL, 2013.
- [3] "Optimization of Reservoir Operation Via Reinforcement Learning", 6th National Congress on Civil Engineering, Semnan (Iran), 2011.

Referee/Reviewer Services

- Water Recourse Research
- Earth and Space Science
- Journal of Hydrology
- Hydrology and Earth System Sciences
- Journal of Water Resources Planning and Management
- Journal of Hydrologic Engineering

- Journal of Sustainable Cities and Society
- KSCE Journal of Civil Engineering
- Stochastic Environmental Research and Risk Assessment

Workshops Activities / Research Fieldtrips

- RTK measurement field trips at Kennedy Space Center, spring and summer 2015.
- Biomass productivity measurement field trip, Weeks Bay, Alabama, summer 2014.
- ADCIRC Workshop and Boot-camp, Infinity Science Center, Mississippi, USA, March -April, 2014.
- Graduate grantsmanship series workshop, University of Central Florida, spring 2014.
- Preparing tomorrow's faculty program, Faculty Center for Teaching & Learning at UCF, spring 2014.

Awards, Scholarships and Fellowships

- Cohort of the National Science Foundation's Innovation Corps (I-Corps) Scholarship, 2015.
- Graduate Student Association scholarship to attend AGU fall meeting, 2014.
- Student Government Association award to attend AGU fall meeting, 2014-2015.
- Scholarship recipient, L.E.A.R.N program mentor, University of Central Florida, fall 2015-spring 2016.
- Graduate presentation fellowship award, University of Central Florida, 2015.

Teaching Experiences

- Graduate mentor at LEARN undergraduate research program, UCF, fall 2015-spring 2016.
Projects: (i) Vegetation control on drainage networks across USA, (ii) The effects of land surface slope on the drainage density across USA.
- Volunteer instructor, water summer camp, UCF, 2016 (frequently).
- Lab instructor, Water Resources II, UCF, summer 2013-fall 2014.
- Volunteer instructor, Introduction to MATLAB, IAHR, UCF, 2012-2016 (frequently).
- Volunteer instructor, UCF Stem Day, UCF, 2014-2016 (frequently).
- Volunteer instructor, COMPASS program, UCF, 2014-2016 (frequently).
- Volunteer instructor, Excel program, UCF, 2014-2016 (frequently).
- Accepted to "Preparing tomorrow's faculty" program, Faculty Center for Teaching & Learning at UCF, spring 2014.

Volunteering / Outreach Activities

- Vice-president for IAHR student chapter at UCF, 2016-present
- Treasurer for IAHR student chapter at UCF, 2015-2016
- Secretary for IAHR student chapter at UCF, 2014-2015
- Graduate mentor in undergraduate research program (L.E.A.R.N), 2015.
- Volunteer for RTK workshop (UCF EXCEL program), 2014-2016.
- Instructor for IAHR UCF student chapter seminar, 2015.
- Instructor for UCF STEM day, 2014-2016.
- Instructor for Water summer Camp at UCF, 2016.
- Instructor for UCF COMPASS Program, 2014-2016.
- Instructor for UCF Excel Program, 2014-2016.

Computer Skills

- **Programming:** Python, MATLAB, Java, FORTRAN, C.
- **Engineering:** ArcGIS, HEC-RAS, AutoCAD.
- **Operating Systems:** Windows, Linux.

Work Experiences / Projects

- The response of main water users to change in policies regarding the subsidy in Iran, 2010-2012.
- Simulating Minab and Sham-Nilan dams, and other related resources using WAEP model, 2010-2011.
- Value engineering of Baghan dam, 2010-2011.
- The water vision for Hormozgan province, 2008-2009.
- Integrated water resources management in Hormozgan province, 2008-2009.
- Evaluating the drought events in Khuzestan province. 2008-2009.

Affiliation / Membership

- Student member, International Association of Hydro-Environmental Engineering and Research (IAHR).
- Student member, American Society of Civil Engineering (ASCE).
- Student member, American Geophysical Union (AGU).

References

- **Dingbao Wang**, Department of Civil, Environmental & Construction Engineering
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- **Arvind Singh**, Department of Civil, Environmental & Construction Engineering
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- **Stephan Medeiros**, Department of Civil, Environmental & Construction Engineering
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