Ali O. Alnahit

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Education

PhD of Civil Engineering — *Clemson University*
Speciality: Water Resources Engineering — *Jan 2016 - Dec 2020*
Thesis: Quantifying the Role of Climate and Watershed Characteristics on Surface Water Quality in Southeast Atlantic Region of the US

Master of Civil Engineering — *Oregon State University*
Speciality: Water Resources Engineering — *Jan 2014 -Dec 2015*
Thesis: A Remotely Controlled Siphon System for Dynamic Water Storage Management

Bachelor of Civil Engineering — *King Saud University*
Speciality: Water Resources and Environmental Engineering — *Sep 2007 - Aug 2012*
Graduation Project: Design of Flood Control Gravity Dam in Wadi Banban, Riyadh

Academic Experience

King Saud University — *2021 – Present*
Assistant Professor — *Riyadh, KSA*

- Instructor for two undergraduate courses: Fluid Mechanics and Hydraulic Engineering
- Instructor for one graduate course: Selected topics in Water Resources (Modelling of hydrological extremes: Droughts and floods)
- Advised several capstone design projects
- Member of several committees at the civil engineering department level

Clemson University — *Aug 2018 – Dec 2020*
Research and Teaching Assistant — *Clemson, SC*

- Developed stochastic models to quantify the uncertainty of satellite products
- Developed statistical models to quantify the uncertainty of water quality in rivers
- Implemented ML models to predict water quality in streams
- Developed numerical models to simulate particle cloud flows
- Instruct the Fluid Mechanics Lab for two years
- Led the fluid mechanics lab instructors for one year
- Worked as a TA for several undergraduate and graduate courses
- A member of the Chairman Selection Committee
- Awarded ”Rozendale Emerging Leaders” for the year of 2019

Oregon State University — *Jan 2015 – Dec 2015*
Research Assistant — *Corvallis, OR*

- Developed numerical models to simulate flows in siphon systems
- Designed and ran experiments for the initiation of flows in siphon systems
- Contributed to developing numerical models to identify the conditions that may lead to geysering flow

Non-Academic Experience

King Saud University — *Aug 2021– Present*
A Member of the Internal scholarship program — *Riyadh, KSA*

- Developed KPIs to measure program performance and track improvements
- Created a marketing strategy to promote the program to both public and private sectors
- Designed a KPI dashboard to measure and evaluate program performance

- Prepared quarterly reports to monitor the progress of students within the program

King Saud University *Aug 2021 – May 2023*
Supervisor of Educational Development Unit *Riyadh, KSA*

- Supervision of the College of Engineering Award of Excellence in Graduate Projects
- Prepared a quarterly report monitoring average grades, dropping rate, and failure rate in general and specialized engineering courses
- Conducted periodic questionnaires to improve students' learning outcomes in the general engineering courses
- Updated the policy and procedure for students' transferring process within and outside the College of Engineering
- Conducted periodic performance reviews on newly accepted students from outside the college to evaluate admission criteria
- Conducted periodic estimation of the number of accepted students based on admission criteria and available seats within and outside the college
- Hold an annual meeting with the Common First Year Deanship to address students' inquiries about admission criteria, available seats, and college departments
- Member of several committees at the Vice Deanship for Academic and Educational Affairs level
- Submitted four proposals to improve general engineering courses and labs

Saudi Oger *Summer, 2010*
Intern of Civil Engineering *Riyadh, KSA*

- Prepared progress reports describing the project's progress
- Designed a detailed retaining wall

Technical skills

Programming Languages	Matlab, R, Python, FORTRAN
Commercial Software	Ansys Fluent, StarCCM+, ArcGIS, SWAT Model, HEC-RAS, HEC-HMS,HEC-SSP, AutoCAD, SWMM, EPANET, TELEMAC-2D

Awards

Travel Award	Rozendale Emerging Leaders	*2019*
Best Capstone Design Project	BAE Systems Company	*2012*
Best Oral Presentation	Ministry of Education	*2006*

Publications

Book Chapters

- Mishra, A., Alnahit, A., Mukherjee, S. (2022). Rainfall and droughts. In Rainfall (pp. 451-474). Elsevier.

Articles in refereed journals: Published

- Alnahit, A. O., Mishra, A. K., Khan, A. A. (2020). Quantifying climate, streamflow, and watershed control on water quality across Southeastern US watersheds. Science of The Total Environment, 739, 139945. (Q1, Impact Factor 10.754)
- Alnahit, A. O., Mishra, A. K., Khan, A. A. (2020). Evaluation of high-resolution satellite products for streamflow and water quality assessment in a Southeastern US watershed. Journal of Hydrology: Regional Studies, 27, 100660. (Q1, Impact Factor 5.437)
- Mishra, A., Alnahit, A., Campbell, B. (2021). Impact of Land uses, Drought, Flood, Wildfire, and Cascading events on Water Quality and Microbial Communities: A Review and Analysis. Journal of Hydrology, 125707. (Q1, Impact Factor 6.708)

- Giri, S., Mishra, A., Zhang, Z., Lathrop, R. G., Alnahit, A. O. (2021). Meteorological and hydrological drought analysis and its impact on water quality and stream integrity. Sustainability, 13(15), 8175. (Q2, Impact Factor 3.889)
- Alnahit, A. O., Mishra, A. K., Khan, A. A. (2022). Stream water quality prediction using boosted regression tree and random forest models. Stochastic Environmental Research and Risk Assessment, 36(9), 2661-2680. (Q1, Impact Factor 4.965)
- Elsebaie, I. H., Kawara, A. Q., Alnahit, A. O. (2023). Mapping and Assessment of Flood Risk in the Wadi Al-Lith Basin, Saudi Arabia. Water, 15(5), 902. (Q2, Impact Factor 3.530)

Peer-reviewed conference proceedings: Published

- Leon, A., and Alnahit, A. (2016). A remotely controlled siphon system for dynamic water storage management.

Unreviewed conference proceedings: Published

- *Alnahit, A. O., and Leon, A. S. (2015). "A Remotely Controlled Siphon System for Dynamic Water Storage Management." Poster presented in the America Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015*
- *Elayeb, I. S., Leon, A. S., Choi, Y., and Alnahit, A. O. 2015. "An experimental study of geyser-like flows induced by a pressurized air pocket." Poster presented in 21 the American Geophysical Union Fall Meeting, San Francisco, California, December 14-18.*
- *Alnahit, A. O., and Leon, A. S. (2015). "A Remotely Controlled Siphon System for Dynamic Water Storage Management." Poster presented in the America Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015.*
- *Leon, A., Alnahit, A. (2016). A remotely controlled siphon system for dynamic water storage management.*
- *Alnahit, A. O., and Khan, A. A. " Impacts of interpolation schemes on critical source areas identification for non-point source pollution control based on SWAT model", Georgia Water Resources Conference, Atlanta, GA, June 3-7, 2017.*
- *Alnahit, A. O., Mishra, A. K., and Khan, A. A. "Evaluation of Ensemble Precipitation Data for Uncertainty Analysis in SWAT Water Quality Simulation", World Environmental Water Resources Congress, ASCE, Minneapolis, MN, June 3-7, 2018.*
- *Alnahit, A. O., Mishra, A. K., and Khan, A. A. " Evaluating the impacts of DEM and Precipitation products on the on critical source areas identification for non-point source pollution control", World Environmental Water Resources Congress, ASCE, Minneapolis, MN, June 3-7, 2019.*
- *Alnahit, A., Kaye, N. and Khan, A., 2019. Modeling of Round Buoyancy Driven Particle Clouds. APS, pp.H13-010.*

Service Activities

King Saud University *Jan 2020– Present*
Reviewer *Riyadh, KSA*

- Journal of hydrology
- Journal of hydraulics (ASCE)
- Hydrological Sciences Journal
- Science of The Total Environment
- Journal of Environmental Management

King Saud University *Jan 2020– Present*
Membership in Professional Organizations *Riyadh, KSA*

- ASCE, American Society of Civil Engineers, Member of the Environmental Water Resources Institute

- AGU, American Geophysical Union, Member of Hydrology Sections
- APS, American Physical Society, Member of APS Division of Fluid Dynamics

Research Interest

Water security	Climate change impact and horological modeling
Drought, Flood, and Precipitation Extremes	Stochastic Modeling: Forecasting and Predictions
Stormwater management	Modeling: SWMM, ArcGIS, HEC-RAS, SWAT
Computational hydraulics	CFD and numerical modeling
Sediment and Contaminant transport	Numerical modeling