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Pooja Parvathy Preetha

Objective

A passionate and self-motivated Environmental Engineer with ten years of work experience, seeking opportunities in innovative works aiming at socio-economic and environmental sustainability

Education

University of Alabama in Huntsville (UAH), December 2019, GPA: 3.9 on 4.0
PhD in Civil & Environmental Engineering on Water Quality Modeling Huntsville, Alabama, United States

University of Alabama in Huntsville (UAH), December 2019, GPA: 3.9 on 4.0
Master of Civil Engineering – Civil and Environmental Huntsville, Alabama, United States

Indian Institute of Technology, Madras, (IITM), June 2013, GPA: 8.3 on 10.0
Master of Civil Engineering – Hydraulics and Water Resources Chennai, Tamil Nadu**,** India

College of Engineering, Trivandrum (CET), April 2011, GPA: 8.0 on 10.0
Bachelor of Technology – Civil Engineering Trivandrum, Kerala, India

Experience

Alabama A&M University, Department of Civil Engineering, September 2020 to Present
Assistant Professor Huntsville, Alabama

- Conducted extensive research on spatiotemporally dynamic modeling and monitoring of water quality; groundwater quality and nutrient transport modeling implementing remote sensing and hydrologic models; vulnerability assessment of climate variability and land use land cover change effects on water quality of river basins; investigation of mixed land covers encompassing water bodies and structures
- Teaching interests include Introduction to Civil Engineering, Fluid Mechanics, Hydraulic Engineering, Hydrogeology, Environmental Engineering, and Hydraulic Engineering & Design
- Teaching and student advising of undergraduate students
- Administered seminar talks and guest lectures for students in collaboration with civil engineering companies

UAH, Department of Civil and Environmental Engineering, August 2016 to December 2019
Teaching Assistant / Research Assistant Huntsville, Alabama

- Instructor for Soil Mechanics Laboratory Experiments for undergraduate students in UAH
- Teaching evaluator of the courses including Soil mechanics and foundation, Structural analysis, Hydraulic engineering and Surface hydrology for undergraduate students in UAH
- Slashed training sessions on theoretical conceptualization, simulation and application of hydrologic modeling tools (Geographical Information System (GIS), Soil and Water Assessment Tool (SWAT))
- Assessment of climate variability and short term land use land cover change effects on water quality of river basins in India and United States, compared past and future climate scenarios
- Developing geospatial algorithms for downscaling and exploring the spatial and temporal dynamics of field data, wildfires, deforestation, vegetation and crops, land use and land cover changes in Southeastern United States
- Modeling groundwater quality and nutrient transport: Land cover and soil vulnerability assessment by implementing remote sensing and hydrologic models in multiple states in the USA
- A statewide analysis of bicycle crashes in Alabama: pattern and injury severity investigation
- Geospatial analysis of traffic data for generating data for non-home based trips and transport network resilience
- Applying National Bridge Inventory, HEC-RAS and GIS for assessment of flood zonation and land cover exposures to floods: Case studies of roads, highways, and bridges in Alabama

Jones Lang LaSalle (JLL), July 2013 to November 2015
Assistant Project Manager Bangalore, Karnataka, India

- Led the Procurement Operations team for a Fortune 50 client in the Construction vertical, performing end-to-end analyses of challenging tendering and costing activities in the vendor and client interaction platforms
- Supervised the EHS facility management system for various turnkey projects including Accenture, Exxon, and IBM. Administered the employee and worker participation, hazard analyses, safe operations enhancement with training, risk management, hazardous wastes, materials, and emissions, as well as collaborated construction and safety system elements
- Project manager role in refurbishment projects with a strong focus on organizing and prioritizing resources, work and project scheduling and promoting inter professional development
- Strong problem solving and decision making skills with a fine knowledge of a suite of software, toolsets and models. Ability to develop solution sets to a problem and make valid recommendations for resolution and implementation

Omega Analytics Private Limited, April 2012 to July 2012
Intern Bangalore, Karnataka, India

- Worked on the optimal design of irrigation canal and hydraulic design of bridges

Skyline Foundations and Structures (SFS), June 2010 to August 2010
Intern Trivandrum, Kerala, India

- Worked on the design of water supply systems and cost estimation of water supply projects

Publications and Conferences

- Preetha, P.P., Al-Hamdan, A.Z. Integrating finite-element-model and remote-sensing data into SWAT to estimate transit times of nitrate in groundwater. Hydrogeol J (2020). https://doi.org/10.1007/s10040-020-02171-5
- Preetha PP, Al-Hamdan AZ (2020) Developing Nitrate-Nitrogen Transport Models using Remotely-Sensed Geospatial Data of Soil Moisture Profiles and Wet Depositions, Journal of Environmental Science and Health, Part A 55 (5).
- Preetha, P.P., Al-Hamdan, A.Z, Anderson, M.D., 2019. Assessment of climate variability and short term land use land cover change effects on water quality of Cahaba river basin. International Journal of Hydrology Science and Technology
- Preetha, P.P., Al- Hamdan, A.Z., 2018. Multi-level pedotransfer modification functions of the USLE-K factor for annual soil erodibility estimation of mixed landscapes. Modelling Earth Systems and Environment 5(3): 767:779.
- Joseph, N., Preetha, P. P., Narasimhan, B., 2021. Assessment of environmental flow requirements using a coupled surface water-groundwater model and a flow health tool: A case study of Son river in the Ganga basin. Ecological Indicators, 121, 107110.
- Al- Hamdan, A.Z., Preetha, P.P., Al- Hamdan, M.Z., Crosson, WL; Albashaireh, R.N., 2018. Reconnoitering the linkage between cardiovascular disease mortality and long-term exposures to outdoor environmental factors in the USA using remotely-sensed data. Journal of Environmental Science and Health, Part A 809-818.
- Al- Hamdan, A.Z., Preetha, P.P., Albashaireh, R.N., Al- Hamdan, M.Z., Crosson, WL; 2018. Investigating the effects of environmental factors on autism spectrum disorder in the USA using remotely sensed data. Environmental Science and Pollution Research 25(8):7924-7936.
- Preetha, P.P., Al- Hamdan, A.Z., 2021. The Synergy of Remotely-Sensed Data in Dynamic Modeling of Spatiotemporal Crop and Cover Management Factor. Pedosphere (Article in Press).
- Preetha, P.P., Al- Hamdan, A.Z., 2020. Evaluation of Rapid Conversion Zones and Atmospheric Nitrate Deposition Interactions using Multi-Criterion Modeling Approach and Remotely-Sensed Data. AGU Fall Meeting 2020.
- Preetha, P.P., Shirani-bidabadi, N., Al-Hamdan, A.Z, Anderson, M.D., 2020. Applying NBI, HEC-RAS and GIS for Assessment of Flood Zonation and Land Cover Exposures to Floods: Case Studies of Bridges in Alabama. Transportation Research Board, Walter E. Washington Convention Center, Washington, D.C.

- Preetha, P.P., Al- Hamdan, A.Z., Anderson, M.D., 2018. Assessment of the impact of land cover and land use changes on the water quality of sediments and nutrients in Cahaba River Basin using SWAT. Environmental Science and Technology, Houston, Texas.
- Preetha, P.P., Al- Hamdan, A.Z., 2018. Multi-level modification of the USLE K factor for annual soil erodibility assessment of mixed landscapes. Alabama Water Resources Conference, Perdido Beach Resort, Alabama.
- Preetha, P.P., Joseph, J., Narasimhan, B., 2013. Assessment of climate change impacts on the surface water and ground water potentials of Chennai river basin. Proceedings of HYDRO 2013 International, IIT Madras, India.
- Joseph, J., Preetha, P.P., Narasimhan, B., 2013. Estimation of in stream flow requirements of Son River in Ganga Basin. Proceedings of HYDRO 2013 International, IIT Madras, India.
- Joseph, J., Preetha, P.P., Narasimhan, B., Arnold, J.G., Srinivasan, R., 2013. Integration of a pseudo 3D finite element ground water model with SWAT. International SWAT Conference.

Relevant Projects

Indian Institute of Technology, Madras, (IITM) Chennai, Tamil Nadu, India

- Strategize flood management systems using flood mitigation methods
- Model development and additional feature implementation in Soil and Water Assessment Tool

College of Engineering, Trivandrum (CET) Trivandrum, Kerala, India

- Civil Engineering Union Project on Tsunami Shelter which intended to mitigate the immediate effects of the natural disaster, Tsunami using a working model of a flood affected area
- Densification of loose sand using concrete poles and model improvement using a novel field approach

Skills

- *Research areas:* GIS, Remote sensing, Water quality modeling
- *Simulation softwares:* ArcGIS, Epanet, HEC-RESSIM, AUTOCAD, SWAT, HEC-RAS, GEE
- *Programming:* C++, MATLAB, Python, R, Windows
- *Others:* Prolog Converge, One View Projects, MSP; MS Office (Excel, Access, Word, Outlook, PowerPoint)

Relevant Courses

- Statistical Methods for Engineers, Sustainable Construction, Structural Analysis, Storm Water Management, Advanced Waste Water Engineering, Python for ID ESS Applications, Remote Sensing and GIS in Hydrology, Advanced GIS, Engineering Systems, Simulation Modelling, Quantitative Surveying and Valuation, Environmental Engineering, Groundwater Engineering

Professional Services

- **Reviewer**: National Science Foundation, GIScience & Remote Sensing, Hydrogeology Journal, Water Resources Management, Journal of Environmental Science and Health Part A, Transportation Research Board, International Journal of Hydrology Science and Technology, Journal of Dryland Agriculture, International Journal of Water Resources and Environmental Engineering
- **Member**: American Geophysical Union, American Society of Civil Engineers, Chargers UAH, CETAA

Leadership Experience

- Sigma Alpha Pi
- Basic Leadership Certification-The National Society of Leadership and Success
- Educational seminar presenter of a research article for HYDRO 2013 International, organized by IITM, India
- Coordinator of the Asha Kiran – A Ray of Hope event
- Coordinated and participated in various events for inter-college festivals: Dhwani (CET) and Saarang (IITM)
- Central Government scholarship for Mohiniyattom from 2003 to 2013
- First runner up in solo dance performance for CTC 2014 by NDTV, India