ANISH KHANAL
RESEARCH MODELER

Summary

As a keen student of water resources sciences , I have developed expertise in physically based modeling , statistical modeling , machine learning techniques and geospatial analysis .I am actively looking for opportunities to innovate solutions to challenges in hydrology, hydraulics and water systems.

Contact

✉ anish.r.khanal@gmail.com
☎ 4159921384
📍 Bedford, Texas
in www.linkedin.com/in/anish-khanal-ph-d-p-e-73788018/
◯ arkhnl

Skills

HYDRAULIC MODELING
HEC-RAS
MIKE 21
BSTEM
MODFLOW
HEC-HMS

GIS
ARC GIS 10.X
ArcPy
Python Addin

DATA SCIENCE
Exploratory Data Analysis
Statistical Modeling
Machine Learning
Time series analysis/Forecasting
Data visualization
Data Wrangling/Management
Big Data processing

PROGRAMING/SCRIPTING
Python
Numpy
Scipy
Pandas
Scikit Learn
Statmodels
Keras
Tensorflow
Pyspark
MATLAB
PostgreSQL
UNIX SHELL scripting

Professional Experience

Robert S Kerr Environmental Research Center, USEPA · Ada, OK
Research Modeler · June 2016 to Current
- Developed python tool in ArcGIS to generate input data for physically- based numerical model
- Developed python scripts to analyze and visualize vulnerability of water resources to contamination from the spills
- Performed Plume modeling to estimate groundwater pollution
- Applied machine learning techniques to develop predictive models to estimate the levels of BTEX compounds and Ethanol in gasoline
- Assisted in development of overland flow model for crude oil

Oklahoma State University · Stillwater, OK
Researcher · Aug. 2012 to May 2016
- Modeled erosion and bank retreat process with Bank Stability and Toe Erosion Model (BSTEM) and HEC RAS
- Designed and performed laboratory and field experiments on cohesive soil erosion with Jet erosion test (JET) device
- Analyzed JET device and methodology to develop standard operation protocol
- Taught sophomore level MATLAB course and Mentored undergraduate research fellowship recipients
- Published peer reviewed articles in Journal of Hydrologic Engineering, Journal of Hydraulic Engineering, Ecological Engineering

Southern Illinois University · Carbondale, IL
Researcher · Jan. 2010 to Aug. 2012
- Developed 2D hydrodynamic models of river training structures in Middle Mississippi using MIKE 21c, HECRAS
- Analyzed impact of the river training structures on aquatic habitat and presented results of the simulations using ArcGIS
- Published peer reviewed article in Journal of Hydrology
- Operated boat mounted Acoustic Doppler Current Profiler (ADCP) unit in local Rivers
- Processed and mapped raw data from the ADCP unit using ArcGIS 9

Education

Oklahoma State University · Aug. 2012 to May 2016
Ph.D. Biosystems Engineering 2016
Concentration: Water and Soil Engineering

Southern Illinois University · Jan. 2010 to Aug. 2012
MS Civil Engineering 2012
Concentration: Water Resources Engineering

Pertinent Publications

Khanal, A., Kalvon, K., Fox, G., Daly, E. (2016). "Comparison of Linear and Nonlinear Models for Cohesive Sediment Detachment: Rill Erosion, Hole Erosion Test, and Streambank Erosion Studies". Journal of Hydraulic Engineering. doi: 10.1061/(ASCE)HY.1943-7900.0001147.

Kalvon, K., Fox, G., Guertault, L., Langendoen, E., Enlow, H., Miller, R., Khanal A. (2016). "Evaluating a Process-Based Model for use in Streambank Stabilization: Insights on the Bank Stability and Toe Erosion Model (BSTEM)". Earth surface Processes and Landforms (State of Science paper). doi: 10.1002/esp.4073.

Remo, J., Khanal A., Pinter, N. (2013). "Assessment of chevron dikes for the enhancement of physical-aquatic habitat within the Middle Mississippi River, USA". Journal of Hydrology, 501(146-162). doi:10.1016/j.jhydrol.2013.07.007.

Weaver, J.W., Murray, A.R, Khanal, A., Kremer, F.V., (2017) Relationships between Private Domestic Wells and Underground Storage Tanks: A Pilot Mapping Implementation, U.S. EPA/600/R-17-282.