AAKASH AHAMED

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EDUCATION

STANFORD UNIVERSITY **Stanford, CA**
PhD Candidate Geophysics (full scholarship) **2017 - Present**
Dissertation: "*Understanding scale dependent hydrodynamics of the California Central Valley Watershed"*
Research Interests: Hydrologic remote sensing, model-data fusion, machine learning, and data assimilation for applications in water resources management, agriculture, natural hazards, and energy.

BOSTON COLLEGE **Chestnut Hill, MA**
MSc Earth/Environmental Sciences (full scholarship) **2012 - 2014**
Honors: Research Fellowship (2013-2014), Head Teaching Assistant (2013), Winner of Boston College GIS Contest (2014), President of Department Graduate Student Association (2013-14)

FRANKLIN & MARSHALL COLLEGE **Lancaster, PA**
BS Geosciences (with honors), BA Government **2008 - 2012**
Honors: Geomorphology Research Award (2012), Satell Scholar (2011-12), John Marshall Pre-Law Honor Society (2011-12), Richard M. Foose Memorial Fellowship (2011), Hackman Scholar (2010-11), Honors List and Deans List (6 Semesters)

PROFESSIONAL EXPERIENCE

National Aeronautics and Space Administration (NASA) **Greenbelt, MD**
Support Scientist, Goddard Space Flight Ctr. Hydrological Sciences Lab June 2015 – Dec. 2018
- Algorithm and software development, publications, international conference presentations for near real time satellite flood monitoring and impact assessment systems (part time since 2017).
- Satellite based landslide detection and extreme precipitation monitoring systems used for disaster prediction and response in high mountain Asia.

National Geographic Society **Washington, DC**
Emerging Explorer 2020 – 2021
- Drone and multisatellite data assimilation to improve flood monitoring in Mekong River Basin. Collaboration with scientists at Stockholm Environment Institute, Bangkok, Thailand.

Ceres Imaging **Oakland, CA**
Remote Sensing / Image Processing Scientist Feb. 2017 - Sept. 2017
- Early technical employee at precision agriculture remote sensing startup. Image analysis, software development, data processing for water stress and nutrient application products.

World Wildlife Fund (WWF) **Washington, DC**
Research and GIS Analyst, Sustainability R&D Sept. 2014 - June 2015
- Water resources and agricultural optimization strategies for complex corporate supply chains.

SKILLS

Operating Systems: Linux, Unix, Mac, Windows
Programming Languages: Python, R, Matlab, C/C++ (basic), LaTeX, Javascript, HTML, CSS
Packages: NumPy, SciPy, Pandas, Matplotlib, Seaborn, Jupyter
Data Science: Scikit-Learn, Keras, Tensorflow, Theano
Image Processing: Scikit-Image, OpenCV, Agisoft Phoscan
Geospatial: Google Earth Engine, GDAL, Xarray, NetCDF, Rasterio, Geopandas, Finoa, Shapely, ArcGIS, QGIS, ENVI, PostGIS
Software Development: Git, Make, Heroku, Docker, Anaconda, Vagrant, virtualenv
Graphics and Audio: Photoshop, Illustrator, Microsoft Office Suite, Ableton, Audacity

PUBLICATIONS

Fayne, J. V., **Ahamed, A.**, Roberts-Pierel, J., Rumsey, A. C., & Kirschbaum, D. (2019). Automated Satellite-Based Landslide Identification Product for Nepal. Earth Interactions, 23(3), 1-21.

Oddo, P. C., **Ahamed, A.**, Bolten, J. D. (2018). Socioeconomic Impact Evaluation for Near Real-Time Flood Detection in the Lower Mekong River Basin. Hydrology, 5(2), 23.

Ahamed, A., and Bolten, J. D. (2017). A MODIS-based automated flood monitoring system for Southeast Asia. International Journal of Applied Earth Observation and Geoinformation, 61, 104-117.

Ahamed, A., Bolten, J.D., Doyle, C.S., Fayne, J.V. (2017). Near Real Time Flood Monitoring and Impact Assessment Systems. In Remote Sensing of Hydrological Extremes.

Fayne, J. V., Bolten, J.D., Lakshmi, V., **Ahamed, A.** (2017). Optical and Physical methods for Mapping Flooding with Satellite imagery. In Remote Sensing of Hydrological Extremes.

Merritts, D., Walter, R., **et al.** (2011). Anthropocene streams and base-level controls from historic dams in the unglaciated mid-Atlantic region, USA. Philosophical Transactions of the Royal Society: Mathematical, Physical and Engineering Sciences, v. 369, no. 1938, p. 976-1009.

CONFERENCE ABSTRACTS

Ahamed, A., Pauloo, R., Wei, Z., Melton., F, Knight, R.J., (2019). Remote Sensing-Based Estimation of Groundwater Storage Changes in California's Central Valley. Eos, Transactions, AGU, American Geophysical Union Chapman Conference, Valencia, Spain, October 10-14, 2019, abstract #30.

Ahamed, A., Dewar, N., Knight, R.J., (2018). Predicting Agricultural Production in California Using Satellite Data and Machine Learning. Eos, Transactions, AGU, American Geophysical Union, Washington, DC, LA, December 10-14, 2018, abstract #H31H-2004:

Oddo, P., **Ahamed, A.**, Bolten, J.D., (2017). Socio-economic Impact Analysis for Near Real-Time Flood Detection in the Lower Mekong River Basin. Eos, Transactions, AGU, American Geophysical Union, New Orleans, LA, December 11-15, 2017, abstract #H104-298721.

Ahamed, A., Bolten, J.D., (2016). Assessing the Utility of a Satellite-Based Flood Inundation and Socio-Economic Impact Tool for the Lower Mekong River Basin. Eos, Transactions, AGU, American Geophysical Union, San Francisco, CA, December 12-16, 2016, abstract # NH53A-1986.

Ahamed, A., Bolten, J.D., Doyle, C.S., (2016). Assessment of Monsoon Flood Disaster Impacts in Southeast Asia: Implications for Rapid Disaster Response. EGU General Assembly, 2016, Vienna, Austria, April 17-22, 2016, abstract #EGU2016-ASC-2016-17958.

Roberts-Pierel, J., **Ahamed, A.**, Fayne, J., and Rumsey, A., (2015). New Products for Near Real-Time Enhanced Landslide Identification and Precipitation Monitoring, Eos, Transactions, AGU, American Geophysical Union, San Francisco, CA, December 14-18, 2015, abstract #NH44B-03.

Ahamed, A., Snyder, N.P., and David, G.L.C., (2014). Factors influencing watershed average erosion rates calculated from reservoir sedimentation in eastern USA, Eos, Transactions, AGU, American Geophysical Union, San Francisco, CA, December 15-19, 2014, abstract #EP33A-3611.

Ahamed, A., Snyder., N.P., and David., G., (2014). Geomorphic and land use controls on erosion rates in eastern USA. GSA Abstracts with Programs, Lancaster, PA, March 23-25, 2014, v. 46, no. 2, p. 1.

Ahamed, A., Merritts, D.J., and Grand Pre, C.A., (2011). Bedload entrainment in a long-term floodplain wetland restoration experiment, Big Spring Run, PA. GSA Abstracts with Programs, Annual National Meeting, Minneapolis, MN, October 11-14, 2011, v. 43, no. 5, p. 472.

INVITED LECTURES

University of Mary Washington – Remote Sensing Information Systems for Flood Hazard (10/21/2016)
Franklin & Marshall College – Geospatial and Big Data Applications of Satellite Imagery (10/18/2015)

PATENTS

LAR-18789 DEVELOP DRIP and SLIP Landslide Detection Package (DRIP-SLIP)
Government Agency: National Aeronautics and Space Administration
URL: https://software.nasa.gov/software/LAR-18789-1

FIELD RESEARCH EXPEDITIONS

Stanford Geomorphology Group Arid Lands Geochronology and Geomorphology. Stanford University Department of Geology. Mexican Hat, Utah. March 23 - April 1, 2019.

NASA Snow Expedition (SnowEx) 2016. NASA / US Forest Service. Grand Mesa, Colorado. September 26 - October 1, 2016.

NASA Soil Moisture Active Passive (SMAP) Satellite Validation Experiment (SmapVex). NASA / University of Manitoba. Winnipeg, Manitoba, Canada. July 9 - 18, 2016.

Connecticut River and Cape Code Estuarine Dynamics. Woods Hold Oceanographic Institute / Boston College. Connecticut River / Cape Cod, Massachusetts. May, 2014.

Dam sedimentation and River Morphology. Boston College / University of Maine. Penobscot River, Maine. August, 2013.

Wetland Restoration Experiment and Legacy Sediment Removal. Franklin & Marshall College / Pennsylvania Department of Environmental Protection. Big Spring Run, Pennyslvania. 2010 - 2012.

North Anatolian Fault Mapping and Analysis. South Dakota School of Mines and Technology. Taskesti, Turkey. July - August, 2011.

MEDIA

NASA.gov (Floods):
https://www.nasa.gov/feature/goddard/2018/scientists-deploy-damage-assessment-tool-in-laos-relief-efforts

NASA.gov (Landslides):
https://www.nasa.gov/feature/goddard/2016/using-nasa-data-to-detect-potential-landslides/

NASA Earth Observatory (Landslides):
http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=88319&src=nhrss

Landsat Science (Landslides):
http://landsat.gsfc.nasa.gov/detecting-landslides-in-nepal-with-landsat/

Fast Company (Air Quality):
http://www.fastcoexist.com/3031162/citizen-air-quality-sensors-cover-the-places-governments-cant-reach

Boston College (Air Quality):
http://www.bc.edu/libraries/newsletter/2014summer/gis.html