Lavanya Ashokkumar

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Address: Room 523, Gould Simpson building, Department of Geosciences,
University of Arizona, 1040 E. 4th Street Tucson, AZ 85721, USA

Educational qualifications

Postdoctoral Research Associate Mar 2018 – present
University of Arizona, Tucson USA
Mass balance of ice-sheets and glaciers using GRACE dataset.

Postdoctoral Researcher June 2017 – Feb 2018
Department of Geography, College of Science, Swansea University SA2 8P, UK
Time series analysis of glacier surge mechanism using Sentinel-1 dataset.

PhD Remote sensing Nov 2012 – Dec 2016
Department of Geography, College of Science, Swansea University SA2 8P, UK
Thesis: Understanding long-term glacier dynamics in the Himalayas using satellite remote sensing
Pass with minor corrections and resubmission of the thesis by May 2017.
Funded by the Commonwealth Scholarships UK for PhD in Remote sensing

Master of Science (M.S Res – Satellite image processing) June 2010 – Aug 2012
Department of Civil Engineering, Anna University, Chennai – 25, India
Thesis: Improved band selection and fusion of hyperspectral image data.

Bachelor in Engineering (Geo-Informatics) June 2003 – June 2007
Department of Civil Engineering, Anna University, Chennai – 25, India

Key publications

- **Lavanya, A**., Luckman, A, Kulessa, B and Murray, T (2018). Long term dynamic observation indicate heterogeneity in the Himalayan glacier between 1991 and 2017. *Journal of Glaciology*. (Submitted for review with co-authors) – *Available upon request*.
- **Lavanya, A**., Luckman, A, Kulessa, B and Murray, T (2017). Prediction of surge events in the Karakoram Himalayas from glacier dynamics, climate and topographic modelling. *Global and planetary change*. (In progress).

Non-peer reviewed proceedings

- **Lavanya Ashokkumar** (2017). PhD thesis. Recent variability in Himalayan glacier dynamics using remote sensing. Swansea University, UK.
- **Lavanya Ashokkumar**, Adrian Luckman and Bernd Kulessa (2015). Glacier dynamics in the Himalayas over the last four decades using satellite remote sensing. IGS Kathmandu, March 2015.
- **Lavanya Ashokkumar**, Adrian Luckman and Bernd Kulessa (2014). Spatial and temporal dynamic change in Karakoram glaciers, IGS British branch meeting, Bristol, 2014.
- **Ashokkumar**, L., & Shanmugam, S. (2014, October). Hyperspectral band selection and classification of Hyperion image of Bhitarkanika mangrove ecosystem, eastern India. In SPIE Remote Sensing (pp. 923914-923914). International Society for Optics and Photonics.

- **Lavanya Ashokkumar**, Adrian Luckman and Bernd Kulessa (2013). Analysis of glacier velocities across Karakoram Himalayas over the past decade using Landsat 7–8, IGS British branch meeting 2013, Loughborough UK.

Other publications in Remote sensing

- **Lavanya, A**., & Sanjeevi, S. (2013). An improved band selection technique for hyperspectral data using factor analysis. Journal of the Indian Society of Remote Sensing, 41(2), 199-211.
- Suresh Kumar R., **Lavanya A.,** Vani K. and Sanjeevi S. (2012). Fusion based approach for automatic lunar-crater detection. Acta Futura: Journal of Advanced Concepts, 5, 163–172.
- **Lavanya, A**., Sanjeevi, S. and Vani, K. (2011). Hyperspectral Data Mining – A Feature Selection Technique for Mineral Abundance Mapping on the Lunar Surface. AI in Space: Intelligence beyond planet earth, IJCAI 2011, Spain.
- Suresh Kumar, R., **Lavanya, A**., Vani, K. and Sanjeevi, S. (2011). Texture Based Automatic Lunar-crater Detection and Mapping in Chandrayaan - 1, Image Data. AI in Space; Intelligence beyond planet earth, IJCAI 2011, Spain.

Awards and grants

- **Commonwealth Scholarship and Fellowship** for PhD in Remote sensing, Commonwealth commission at the UK and MHRD, India (2012–2016).
- Travel Grant (**£750**) by the International Glaciological society for the IGS Kathmandu, Nepal, March 2015.
- Travel Grant for Young Scientist (**INR 60, 000**), awarded by the Council of Scientific and Industrial Research (CSIR), Government of India for the Conference 'AI in Space: Intelligence beyond planet earth', Spain, June 2011.
- Master Research funded by Department of Space, Indian space Research organisation (ISRO), PLANEX for the project "Developing tools and techniques for lunar information extraction using multi-sensor image fusion". (Oct 2010 – Oct 2011).

Work experience

Demonstrating/ Teaching Oct 2016 – Dec 2016
Lab modules
GEG236: The Earth from Space: Monitoring Global Environmental Change
GEG208: Introduction to Geographic Information Systems
GEG111: Geographical Writing Skills and Personal Development Planning
GEG236: Approaches to Physical Geography – Talk about preparing for the undergrad dissertation

Lecturer (Equivalent to teaching assistant) June 2012 – Oct 2012
Sree Sastha Institute of Engineering and technology, Chennai 600123, India

- Taught two theory and lab practical which include Basic civil engineering, engineering mechanics, computer programming and surveying practical for the undergraduates.

Junior Research Fellow Oct 2010 – Oct 2011
Department of Information Science and technology, Anna University, Chennai 600025, India

- Worked on the project titled 'Feature extraction of lunar features using multi-sensor image fusion approaches', funded by the **Space application centre (ISRO, India**).
- Major task included algorithm development for image fusion for better spatial interpretability and extraction of lunar features
- Processing of hyperspectral image dataset.

Programmer May 2007 – May 2008

Cognizant technology solutions, Chennai

- Maintenance and production support of Hartford financial system.
- Database management using SQL and front-end development using VB.net

GIS Intern Nov 2006 – April 2007

Red planet consulting, Chennai o

- Developed a stand-alone mobile application using open source GIS application
- Efficient use of Dijkstra's algorithm to provide shortest path to the nearest hospital.

Outreach and communications

- Member of Arizona Women Geoscientists (March 2018 – present).
- Presentation, Science talks, active participation and member of Commonwealth Wales Regional Networks, UK (2012 – 2016).
- Talk on 'Mass balance and glacier velocities in the Himalayas', Science communication, College of Science Lecture series, Swansea University. March 2016. http://cs.swan.ac.uk/~cstneate/CoS_Talks/
- Talk on 'Tracking the dynamic nature of the Himalayan glaciers using Remote sensing' at Postgraduate Research Conference, Cardiff University, June 2014.
- Seminar on 'Recent techniques in remote sensing and GIS' at B.S. Abdur Rahman Crescent University, Chennai (2012) (Invited).

Soft Skills

Programming and visualisation	Unix shell scripts, C, awk, Matlab, R, Gnuplot, GMT
Remote sensing	GAMMA remote sensing, ENVI, IDL, ERDAS Imagine
GIS and statistical software	ArcGIS, QGIS, PostGIS; R, SPSS, Matlab