

# Curriculum Vitae



## Muhammad Usman

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### Recent Positions:

- ❖ **Assistant Professor (IPFP):** Centre for Geographical Information System, University of the Punjab, Lahore (**June 2019-Present**).

### Educational Background:

- ❖ **Post-Doctoral Research Assistant:** CAB International & Manchester University (**Oct 2018- June 2019**). **Project:** Applying Astronomy Capability to Map an Invasive Weed: Leveraging Satellite Surveys to Inform "Famine Weed" Policy in Pakistan.
- ❖ **PhD in Geographical Information System and Remote Sensing-** Department of Land Surveying & Geoinformatics, The Hong Kong Polytechnic University, Hong Kong (**AUG 2014-APR 2018**)  
**Thesis Title:** Modelling Woody Vegetation in Sudano-Sahelina Zone of Nigeria Using Remote Sensing.
- ❖ **MS in Remote Sensing and GIS-** Institute of Geographical Information Systems, National University of Science and Technology, Islamabad-Pakistan (**SEP 2011-SEP 2013**)  
**Thesis Title:** A Spatio-temporal analysis of Water Consumption in Lower Chenab Canal irrigation System.
- ❖ **BS (Hons) in Space Sciences-** Department of Space Science, University of the Punjab (PU), Lahore-Pakistan (**AUG 2007-JUL 2011**)

**Research Interests:** (i) Mapping invasive weed and monitoring vegetation dynamics, (ii) Water Resource Management, (iii) Geographic Object Based Image Analysis (GOBIA), (iv) Biomass Modelling using Remote Sensing, (v) Machine Learning methods (Decision Trees, Random Forest), (vi) Evapotranspiration Modelling using Surface Energy Balance System (SEBS) .

## **Distinctions & Awards:**

- ❖ **Hong Kong Ph.D. Fellowship Award 2014/2015** from Research Grants Council (RGC), Hong Kong **(AUG 2014– AUG 2017)**.
- ❖ Master of Science (MS) **Second Position holder** Institute of Geographical Information Systems, National University of Science and Technology, Pakistan **(SEP 2011–SEP 2013)**.
- ❖ Bachelor of Science (BS) **First Position holder, Merit Scholarships** from Department of Space Science, University of the Punjab, Lahore – Pakistan **(AUG 2007-JUL 2011)**.

## **Past Positions:**

- ❖ **Research Associate:** Department of Land Surveying and Geo-Informatics, The HK PolyU HK **(AUG 2017– May 2018)**.
- ❖ **Graduate Research Assistant:** Department of Space Science, Institute of Space Technology Islamabad **(March 2014 – JULY 2014)**.
- ❖ **Teaching Assistant:** Institute of Geographical Information Systems (IGIS), NUST, H-12 Islamabad. **(SEP 2012 – AUG 2013)**.
- ❖ **Intern:** GIS Lab, WWF-Pakistan, Lahore-Pakistan **(July 2010-Aug 2010)**
- ❖ **Intern:** Pakistan Meteorological Department, Flood Forecasting Division, Lahore-Pakistan **(June 2009-Aug 2009)**

## **Technical Skills:**

- ❖ R, Python and Matlab coding
- ❖ Linux (Ubuntu)
- ❖ Erdas Imagine, ENVI, ArcGIS, QGIS, GRASS and eCognition Developer

## Publications

### Journal Articles:

1. **Usman, M.**, Nichol, J.E. (2018). Remarkable increase in tree density and fuelwood production in the croplands of northern Nigeria. *Land Use Policy (Impact Factor: 3.19, JCR Rank: Q1)*.
2. **Usman, M.**, Nichol, J.E., Ibrahim, A.T., Buba, L. F., (2018). A spatio-temporal analysis of trends in rainfall from long term satellite rainfall products in the Sudano Sahelian zone of Nigeria. *Agricultural and Forest Meteorology. (Impact Factor: 4.03, JCR Rank: Q1)*.
3. **Usman, M.**, Nichol, J.E.(2019). Trends in farmland tree stocks in the agroforestry landscape of northern Nigeria: reconciling scientific and stakeholder perceptions. *Journal of Rural Studies. (Impact Factor: 2.658, JCR Rank: Q1)*.

### Conference Papers:

1. Pablo, G.M., , **Usman, M.**, .....Breton, R. (2019). Understanding hierarchical patterns of plant invasions impacting agriculture: the study case of Parthenium weed in Pakistan. Paper presented at 15th Conference on Ecology and Management of Alien Plant Invasions (EMAPI), Prague, September 11, 2019
2. **Usman, M.**, Nichol, J.E., and Wong M. S. (2018). Spatio-temporal Analysis of Changes in Rainfall Regime in the Sudano Sahelian Zone of Nigeria. In: United Nation Office for Outer Space Affairs/SUPARCO Pakistan/PSIPW 4th International Conference on the "Use of Space Technology for Water Management", Islamabad, Pakistan. February 26-March 02, 2018.
3. Nichol, J.E., **Usman, M.**, and Wong M. S. (2017). The changing role of trees in the agroforestry landscape of northern Nigeria. In: *Royal Geographical Society with IBG Annual International Conference 2017*. London, United Kingdom, August 30- September 01.
4. Nichol, J.E. and **Usman, M.** (2016). Rural energy trends in northern Nigeria: Response to population growth. In: *Royal Geographical Society with IBG Annual International Conference 2016*. London, United Kingdom, August 30- September 02.
5. **Usman, M.**, Hussain, E., Rabbani, U. (2013). Estimation of regional actual evapotranspiration with MODIS data in Lower Chenab Canal System. Paper presented at the 5<sup>th</sup> world engineering congress. Islamabad, Pakistan, 23-25 September 2013.
6. **Usman, M.**, Hussain, E., Ural, S., Shan, J. (2013). Mapping and Monitoring Planned Development of Vegetation Cover in Desert Area using Temporal Remote Sensing Data. Paper presented at the American Society for Photogrammetry and Remote Sensing (ASPRS) Annual Conference, Baltimore, Maryland, March 24-28, 2013.

## Interdisciplinary Activities and Outreach:

- ❖ **Post-Doctoral Research Visit** Jodrell Bank Centre for Astrophysics, The University of Manchester (**Feb 2019-Mar 2019**)
- ❖ **Research Student Attachment Programme (Field Visit)** Department of Geography, Bayero University of Kano (BUK), Kano, Nigeria (**DEC 2015–MAR 2016**)
- ❖ **Visiting Research Scholar** Department of Geosciences and Natural Resource Management (IGN), University of Copenhagen, Copenhagen, Denmark (**JUN 2016 – SEP 2016**)

## Professional Training & Workshops:

1. **Summer School on Managing Shared River Basins**, Connecting Science and Policy for Integrated Water Resource Management (jointly organized by Lead Pakistan and Pakistan Meteorological Department) (**02-06 July, 2018**)  
**Venue:** COMSTECH, Islamabad Pakistan.
2. **Becoming an Effective Teaching Assistant (21-22 May, 2015)**  
**Venue:** Education Development Center, The Hong Kong Polytechnic University, Hong Kong
3. **GeoInformatics Summer School on Spatial Statistics and Big data Analysis (04–14 June 2015)**  
**Venue:** State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS), Wuhan University, China
4. **Advance training course on MATLAB** organized by NUST Science Society (**05–06 APR 2013**)  
**Venue:** National University of Science and Technology, Pakistan

## Professional Society Membership

- ❖ Hong Kong Society of Remote Sensing (HKSRS)

## References

### Prof Janet E. Nichol

Professor

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The Hong Kong Polytechnic University

Hung Hom, Hong Kong

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### Dr Ejaz Hussain

Assistant Professor and Associate Dean

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NUST, Islamabad, Pakistan

### Dr Wong Man Sing

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