

Summary

- Having vast experience of research and working in the field of GIS in different capacities in large organizations
- Experience of working with the organization like Planning and Development Department, United Nations Development Program, Asian Development Bank, Focus Humanitarian, ILF Pvt Ltd, NESPAK Pvt. Ltd, and Netsol Pvt. Ltd.
- Research area is fuzzy GIS and intelligent system development for water and land suitability analysis and published 12 Journal papers and 5 conference paper in this field.
- Experience of project management of different GIS projects in the field of Disaster Risk Management, Water Resource Management, Urban Planning, Agriculture, and Route Planning for Railway line and Gas Pipeline.
- Hands on experience of working in open source solution like QGIS, Udig, HECRAS, R as well as the commercial solution like ArcGIS, ERDAS and ERMapper, Matlab.
- Hands on experience of GIS development in Python, PHP, Java, JavaScript, and C#.
- Hands on experience of working in spatial database and Big Data Handling, i.e., Postgres/PostGIS, Oracle/Oracle Spatial, Apache Hadoop, Elastic Search, and MySQL, web spatial server, i.e., GeoServer, Mapguide, Geonode and ArcServer, and spatial libraries, i.e., Openlayers, Leaflet, Cesium, ArcObject, Geotool, JTS, and Google map API.
- Experience of working in mobile technology like Android, Symbian, and J2ME.
- Experience of teaching in Fuzzy GIS, Geospatial databases, Geo-statistics, Web GIS, Geo-spatial system design and 3d GIS.

Specialties: Water Informatics, Land Suitability Modeling, Fuzzy GIS, Intelligent System, GIS Engineering/Development, Image Processing, Geo-statistics, Geoprocessing

Education

- Ph.D. in Computer Studies
PUCIT Punjab University 2010–2015
Focused on the Fuzzy GIS, Intelligent System Development and Land Suitability Analysis. Research thesis was **Spatial Fuzzy Intelligence System for Land Suitability Model**.
- M.Sc. in Geographical Information System
PUCIT Punjab University 2003–2005
Focused on the GIS, Remote Sensing, GIS Analysis and Decision Support System. Research thesis was **De-noising of SRTM Data using Wavelet**.
- M.S. in Computer Science
UCP 2001–2003
Focused on the Computer Science, Programming, Data Structure, and Databases. Research topic was **Shortest Path Analysis**.
- B.Sc. in Civil Engineering
UET Lahore 1995–2000
Focused on the Structure, Hydrology, Fluid Mechanics, Strength of Material, and Soil Mechanics. Research topic was **Computer Application in Construction Management and Planning**.
- Certificate
Deltares 2018
Indus- Flood Early warning system, river basin modeling, and its integration on web platform, held at Deltares, Delft (Netherlands).
- Certificate
International Research Association on Large Landslides 2017
Field data collection, monitoring, and modeling of large landslides held at State Key Laboratory of Geohazard Prevention and Geo-environment Protection (SKLGP), Chengdu China

- Certificate

Asian Disaster Preparedness Center (ADPC)

2016

Risk Information and Communication for Effective Risk Financing and Development of DRR Policies

arranged by World Bank in Bangkok, Thailand

List of Publication

Journal Publication

1. Spatially analyzing food consumption inequalities using GIS with disaggregated data from Punjab, Pakistan *Food Security Springer (2020)*
2. Co-designing Indus Water-Energy-Land Futures, *One Earth, Elsevier (2019)*
3. Marginality and Social Exclusion in Punjab, Pakistan: A Threat to Urban Sustainability, *Sustainable Cities and Society, Elsevier wordmark(2018)*
4. Using geographical information systems to assess groundwater contamination from arsenic and related diseases based on survey data in Lahore, Pakistan, *Arabian Journal of Geosciences, Springer, October(2017)*
5. Fuzzy Climate Decision Support Systems for Tomatoes in High Tunnels, *International Journal of Fuzzy Systems, Springer (2015)*.
6. Mapping Soil Electric Conductivity using Bayesian Kriging – A case study from Qasur, Pakistan, *Journal of Geological Study, Springer (2015)*
7. Bipolar Fuzzy Digraph in Decision Support System.” *Journal of Multi-Valued Logic & Soft Computing, Journal of Multi-Valued Logic & Soft Computing, Vol. 0, pp. 1-21,(2015)*.
8. GIS Enabled Condition Based Asset Management of Gas Distribution Network A Case Study of Shahdara, Lahore Pakistan, *Journal of Geographic Information System, 7, 358-368. doi 10.4236/jgis.2015.74028. (2015)*.
9. Protecting agricultural land in developing countries— A case study from Lahore, Pakistan, *International Journal of Advance Remote Sensing and GIS. ISSN2320-0243, (2015)*.
10. Type-II Fuzzy Decision Support System for Fertilizer, *The Scientific World Journal 2014, Hindawi Publisher (2014)*.
11. Fuzzy decision support system for fertilizer." *Neural Computing and Applications, Springer Publisher, Neural Computing and Applications, Springer Publisher, pp 1-11, 2014.*
12. Novel Applications of Intuitionistic Fuzzy Digraphs in Decision Support Systems, *The Scientific World Journal 2014, Hindawi Publisher, (2014)*.
13. Digitized Profile of land for agriculture use in Punjab Pakistan, *International Journal of Scientific & Engineering Research, Volume 4th, Issue 11th, November 2013..*
14. Spatial variability mapping of soil in agricultural field of Punjab province(Pakistan) using geographic information system (GIS) technique, *International Journal of Scientific & Engineering Research, Volume 4th, Issue 11th, November-2013.*

Conference Proceeding

1. Geospatial Big Data Platform for Water for All in Indus Basin, World bank conference on Land and Poverty, March 2019
2. Data Clearinghouse for Water Resource Management, ADB Asian Water Forum 2018, Oct 2018
3. Multi-criteria Analysis for Spatial Modelling of Forest Protection Zones, GeoMEast , July 2017
4. Enabling Marketing Intelligence in Spatial Domain using Spatial Statistics, SRSA Conference March 31st - April 2nd , 2016.
5. GIS based probabilistic hazard risk assessment of road accidents, GEOMATE2015, Nov 16th - 18th, 2015.
6. GIS based probabilistic hazard vulnerability and risk assessment of flood in swat and Kabul river, SRSA Conference March 26th - 28th , 2015,
7. Decision Support System for Flood Disaster Management, NARSC Conference, Nov 12th - 15th, 2014.

Work Experience

- **PUCIT Punjab University** Oct 2018 - to date Working as an Assistant Professor in GIS Center. Responsibility include research and teaching Data Science, Geo-statistics, GIS Programming, Geo-Spatial Databases, Web GIS and Geo-spatial System design.
- **Planning and Development Department** June 2016 - September 2018 Worked as a project director in ADB- Assisted "Flood Emergency Resilience Reconstruction Project" (FERRP). The main duties include supervision of all the teams under GIS development, Disaster Risk Reduction, M&E, Mainstreaming Disaster Risk Reduction into Development Process. Developing a spatial data clearing house for data sharing and assessing disaster impact. Looking after the financial aspect of the project.
- **Asian Development Bank** March 2015 - September 2015 Worked as a GIS consultant for Asian Development Bank. Duties include designing a GIS architecture for flood management in Provisional disaster management authorities of Punjab Province and AJK.
- **United Nation Development Program (UNDP)** August 2011 - December 2011 Worked here as a disaster risk reduction mainstreaming coordinator. My responsibilities include main- streaming disaster risk reduction into development process, development of disaster map and capacity building.
- **United Nation Fund for Population (UNFPA)** February 2011 - March -2011 Worked there as a GIS trainer. Responsibility include training of census department on developing and using of GIS data, its analysis and its management for Census.
- **PUCIT Punjab University** August 2007 - May 2016 Worked in Punjab University as an Assistant Professor in GIS Center. Responsibility include research and teaching Water Resource Management, Water Informatics, Geo-statistics, GIS Programming, Geo-Spatial Databases, Web GIS and Geo-spatial System design.
- **CTO 24/7 Pakistan Pvt. Ltd.** June 2007 - March 2008 I have worked there as a GIS consultant and developed a Land Management system by the name of "Landfolio" which is now owned by Trimble. This has been deployed on three countries Antigua, Beliz and Bermuda.
- **NetSol Technologies** July 2006 - September 2007 Netsol is one of the largest IT Company in Pakistan. It is the only company in Pakistan which is at CMMI level 5. I worked here as a GIS developer. My designation was Senior Software Engineer. My responsibility included designing of Land Record Management Information System and develop its prototype.
- **NESPAK Pvt. Ltd.** September 2004 - Feb 2006 NESPAK is one of the largest engineering consultant company in Pakistan. I worked here as a GIS Engineer. Responsibility includes the development of flood plain mapping, team lead for resettlement analysis of Kalabagh Dam project and development of enterprise spatial solution for WCB tax mapping.
- **JGC-DESCON (J-Tech) Pvt Ltd.** December 2003 - August 2004 J-Tech is a joint venture of JGC (Japan) and Descon (Pakistan). Currently it is known as JGC-DESCON. I worked here as CAD Analyst. My designation was Asst. Software Engineer. Responsibility included customizing CAD solutions and initiating and maintaining projects in Databases and CAD.
- **A.H. Trader** April 2000 - August 2001 FONGAS (Fauji Foundation subsidiary) is an LPG gas storage and distribution plant at Kot Addu near PARCO. My company was involved in the Installation of Tube well, laying of GAS pipeline (from PARCO to FONGAS plant) and lying of water supply line and firefighting line within the plant. I worked here as a site engineer. My responsibilities included
 - Manage, handle and communicate with a team of technical staff and subcontractor
 - Supervising laying of gas pipelines and Installation of Tube well
 - Certifying and complying with standards of FONGAS (Fauji Foundation)
 - Maintaining engineering quality standard for materials and work
 - Prepared BOQ (Bill of Quantity).

Membership

- Member, Pakistan Engineering Council
 - Member, Indus Basin Knowledge Forum
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