

Dr Muhammad Ahmed

HOUSE # R-41 WHITE HOUSE GARDEN, SECTOR 24-A SCHEME 33, KARACHI POSTAL CODE: 75330
+92-021-9905-2454
muhammadahmed@neduet.edu.pk

Professional Profile

Eager to bring university students into the twenty-first century using a unique combination of education experience coupled with seven years field background in Geographical Information System development.

- Hold M.Phil. & M.Sc. Degree in Geography with the specialization of GIS & Digital Remote Sensing and also Bachelor's Degree from the same discipline with Mathematics & Physics as subsidiary subjects.
- Experienced in use of the web and other GIS software.
- Dedicated to enthusiastic and dynamic teaching as a means of creating and nurturing a lifelong love of knowledge in student.

Education, Honours, and Certifications

Doctor of Philosophy Urban and Regional Planning

NED University of Engineering & Technology, 2021

Master of Philosophy RS&GIS

University of Karachi, Karachi, 2013

Master of Science Geography

University of Karachi, Karachi, 2006

Bachelor of Science (Hons.) Geography

University of Karachi, Karachi, 2004

Publications

Thesis Publication

PhD Study Title

Study of Seismological Aspects of Seismic Hazard Mitigation of Pakistan

M.Phil. Title

Earthquake Pre-Loss Estimation for Pakistan: Towards Development of GIS-based Analytical Framework

Publications in Scientific Research Journal

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| 2020 | Probabilistic Seismic Hazard Analysis Based Zoning Map of Pakistan. Journal of Earthquake Engineering, pp 1-36. |
| 2018 | Application of the GPS technology to assess time-location pattern of undergraduate students at a private medical university in Karachi, Pakistan: A pilot study. JPMA. The Journal of the Pakistan Medical Association, 68(7), pp.1094-1096. |
| 2016 | Development of Building Inventory for Northern Pakistan for Seismic Risk Reduction. International Journal of Disaster Resilience in the Built Environment, Vol. 7 Issue: 5, pp.501-520; 1759-5908. |
| 2016 | Geographic Access to Working Family Planning Centres and Unintended Pregnancies among Married Women: A Community Based Nested Case Control |

Study. Journal of Epidemiology 6(2):95-108; 0917-5040.

- 2015 Earthquake Damage Assessment of Bridges in Karachi. NED University Journal of Research - Structural Mechanics, Volume XII, Issue: 3, pp 45-62; 2304-716X.
- 2014 Observed damages in Pakistan due to 16 April 2013 Iran earthquake. Bulletin of Earthquake Engineering, 13(2), 703-724; 1570-761X.

Publications in Scientific Conferences

- 2019 A Suggested Seismic Zoning Map of Sindh, Pakistan. First South Asia Conference on Earthquake Engineering (SACEE'19), 21-22 February 2019, Karachi, Pakistan
- 2017 Spatial Efficiency of Public Transport System in Karachi: A GIS Viewpoint, Fifth International Conference on Infrastructure Engineering in Developing Countries (IEDC-2017), Karachi, Pakistan.
- 2017 Post-Earthquake Damage Assessment of Bagh District, AJK Through Geospatial Technologies, Fifth International Conference on Infrastructure Engineering in Developing Countries (IEDC-2017), Karachi, Pakistan.
- 2015 Spatial & Temporal Investigation of Road Accidents in Karachi. Pakistan Urban Forum 2015, 4-7 December 2015. Lahore-Pakistan
- 2015 Aggregate Source Information System. Pakistan Urban Forum 2015, 4-7 December 2015. Lahore-Pakistan.
- 2015 Seismic Risk Assessment of Built Environment in Pakistan. SECED 2015 Conference: Earthquake Risk and Engineering towards a Resilient World 9-10 July 2015, Cambridge UK.
- 2013 Monitoring Spatial and Temporal Transformation in Cultivated Land Coverage in Karachi Using Geo-Spatial Techniques. Fourth International Symposium on Infrastructure Engineering in Developing Countries, IEDC 2013. December 26-28, 2013. Karachi, Pakistan.
- 2012 Transforming Census Data in Pakistan into Spatial Database for Earthquake Loss Estimation Models. 15th World Conference on Earthquake Engineering September 24-28, 2012 Lisbon, Portugal.
- 2012 Assessment of seismic performance of adobe structures in Pakistan and Portugal. 15th World Conference on Earthquake Engineering September 24-28, 2012 Lisbon, Portugal.
- 2012 Association between geographic access to working family planning centres and unintended pregnancies among married women in district Thatta. 7th Health Sciences Research Assembly. Karachi: Aga Khan University Medical College, 2012.
- 2010 GIS based Placement and Route Planning of Emergency Response Vehicle (ERVs) for Efficient Incident Management. First International Conference on Sustainable Transportation & Traffic Management. July 1-3, 2010. Karachi, Pakistan

Scholastic Honours

KOICA Fellowship Program Awarded KOICA fellowship for short term training program on Early Warning System for Natural Disaster, organized by the Korea International Corporation Agency and the National Defense and Disaster Management Training Institute under the international cooperation program of the Government of Korea from March 29 to April 18, 2018.

Member of HEC-NCRC (Higher Education Commission - National curriculum Revision Committee) for the BS/MS programme of Remote Sensing & Geographical Information System (RS&GIS).

Member of HEC-NCRC (Higher Education Commission - National curriculum Revision Committee) for the BS/MS programme of Disaster Management.

Conference Coordinator in Fifth International Conference on Infrastructure Engineering in Developing Countries (IEDC-2017)

Member of Construction Material Research Group (CMRG)

Member of South Asia Earthquake Network (SHAKE)

E-Affiliate Member of Earthquake Engineering and Research Institute, EERI

Academia Representative in the conference on “Geo Tagging of Households and Digital Mapping of Census Blocks as a Part of Census 2017” at Serena Hotel, Islamabad.

Professional Service: Developed GIS Map of Shah Abdul Lateef University (SALU) Khairpur, and received appreciation letter from the Vice Chancellor of SALU.

Participation in Funded Research Projects

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| 2021 | UNDP Project “Strengthening Tsunami & Earthquake Preparedness in Pakistan” |
| 2020 | World Bank Project “COVID-19 GIS based Intelligent Decision Support System” |
| 2020 | World Bank Project “Seismic Hotspot Analysis and Mitigation Investment Plan for Karachi”. |
| 2015 | World Bank project “Development of Probabilistic Flood and Seismic Risk Assessment of Karachi” |
| 2015 | World Bank Project “Development of Probabilistic Flood and Seismic Risk Assessment of Quetta” |
| 2014 | Indus Motor Project “Traffic Congestion Quantification and Estimation of Congestion Economic Cost” |
| 2014 | AKU project “Comparison of time-location pattern of undergraduate university students of Asian countries: The Pakistan component” |
| 2014 | AKU Project “Post Measles Campaign Vaccination Coverage Survey in 22 Districts & Town of Hyderabad & Karachi”. |
| 2013 | UN-HABITAT project “Preparation of Disaster Risk Management Plan for Gadap Town” |
| 2013 | EMME Project (Earthquake Model for Middle East Region) “Seismic Risk & City Scenario packages”. |

- 2013 AKU Project “Reproductive Health Project”
- 2010 Pak-USAiD Project “Development of an ITS –based Traffic Management Model for Metropolitan Area of Pakistan with Karachi as a Pilot Study”
- 2007 RTIR&PC Project (Road Traffic Injury Research & Prevention Centre) “Development of Geo Database of Road Traffic Injuries in Karachi”
- 2006 JICA project “Water and Sewerage System of Urban and Rural of Karachi Division”

Employment History

- 13-MAR-2018 to Date Working in NED University of Engineering & Technology, as an Assistant Professor
- 20-APR-2011 to 12-MAR-2018 Seven year experience of Lecturer at NED University of Engineering & Technology.
- 17-AUG-10 to 19-APR-11 Eight Months experience of GIS Manager in the Pak-USAID funded project at NED University of Engineering & Technology.
- 17-FEB-09 to 16-AUG-10 One Year and Six Months experience of GIS Manager in the Pak-USAID funded project at NED University of Engineering & Technology
- 02-OCT-08 to 16-FEB-09 Seven Months experience of GIS Coordinator in Road Traffic Injury Research & Prevention Centre (RTIRPC)
- 11- JAN-08 to 01-OCT-08 Nine Months experience of Field Data Collection with Federal Bureau of Statistics, Regional Office Karachi GoP.
- 01- JAN-07 to 31-DEC-07 One Year experience of Geo-database Development with Road Traffic Injury Research & Prevention Centre (RTIRPC).
- 02- AUG-06 to 26-SEP-06 Two Months experience Organizing, Execution & Managing Field Work with JICA Study Team.
- 23-FEB-06 to 31-July-06 Five Months experience of Data Enumeration for National Education Census 2006 with Federal Bureau of Statistics, Regional Office Karachi GoP.

Seminars and Conferences

Representation at Foreign Research Forums

- 2013 Attended the annual meeting on project titled “Earthquake Model for Middle East” (EMME) at Istanbul, **Turkey** (29-09-2013 to 03-10-2013)
- 2013 Representing Pakistan & NED University in the meeting on the project titled Earthquake Model for Middle East (EMMA) at Istanbul, **Turkey** (26-08-2013 to 29-08-2013)
- 2011 Attended the Mid - term General Assembly of the research project titled “Earthquake Model for Middle East (EMME)” (30-03-2011 to 03-04-2011), at Amman, **Jordan**.
- 2011 Representing Pakistan & NED University in the meeting on project titled “Earthquake Model for Middle East (WP4 - WP5) (25-02-2011 to 26-02-2011) at Istanbul, **Turkey**.

2011 Representing Pakistan & NED University in the meeting on the Regional Database & Associated Classification and Parameters for Risk Calculations at Istanbul, **Turkey** (25-01-2011 to 26-01-2011).

Organizing Conferences/Workshops

<u>Year</u>	<u>Role</u>	<u>Conference</u>
2017	Conference Coordinator	Fifth International Symposium on Infrastructure Engineering in Developing Countries (IEDC-2013). July 14-15, 2017. Karachi, Pakistan.
2016	Academia Representative	Conference on “Geo Tagging of Households and Digital Mapping of Census Blocks as a Part of Census” September 9, 2016. Islamabad, Pakistan
2016	NED University Representative	Workshop on Multi-hazard risk assessment lesson learnt, August 23-24, 2016, Bhurban, Pakistan
2016	Organizer	Workshop on Recent advancement on earthquake engineering and seismology in south Asian countries 9-10 August 2016, Karachi, Pakistan.
2015	Organizer	1-Day International Workshop on Traffic Microsimulation, December 22, 2015, Karachi Pakistan
2015	Organizer	2-Day International Workshop on Road Safety Analysis & Modeling, December 16-17, 2015, Karachi Pakistan
2015	Workshop Trainer	Three Days International Workshop on Step Towards Tsunami Resilience, September 21-23 2015, Karachi Pakistan.
2015	CMRG Session Organizer ICEC-2015	7 International Civil Engineering Congress (ICEC-2015) - Sustainable Development through Advancements in Civil Engineering June 12-13, 2015 Karachi, Pakistan.
2014	Speaker	Seminar on `Humanitarian challenges in urban disaster` organized by the Pakistan Red Crescent Society (PRCS), Sindh, in collaboration with the International Committee of Red Cross (ICRC) , Saturday 5 th , 2014 April, Karachi, Pakistan
2014	Organizer	Consultation workshop on Multi Hazard Risk Assessment for Karachi, Hotel Marriott, Karachi- Tuesday 28 th , 2014 October.
2014	Organizer	Fourth National Workshop on Construction Materials-“Reducing the Impact gap for Academia- Industry Collaboration” June 12, 2014, Karachi, Pakistan.
2013	Organizer	Fourth International Symposium on Infrastructure Engineering in Developing Countries (IEDC-2013). December 26-27, 2013. Karachi, Pakistan
2013	Organizer	Seminar on “World Day of Remembrance for Road Safety Victims 2013”. December 10, 2013. Karachi, Pakistan.
2013	Organizer	Third National Workshop on Construction Materials, “Construction Industry Perspective” Saturday, March 09, 2013. Karachi, Pakistan.
2012	Organizer	Geo Technical Engineering Challenges and Opportunities International One Day Seminar on Geo Technical Engineering Pakistan Sep 15, 2012, Karachi, Pakistan.

2012	Organizer	“Deterministic Seismic Hazard Assessment of Karachi”, Geotechnical Engineering - Challenges and Opportunities, International one-day Seminar on Geotechnical Engineering, September 15, 2012, Karachi, Pakistan.
2011	Organizer	Second National Workshop on Construction Materials “Bridging the Materials and the Civil Infrastructure Applications” December 22, 2011 Karachi, Pakistan
2010	Organizer	First National Workshop on Construction Materials, November 3, 2010, Karachi, Pakistan.
2010	Organizer	Fourth International Symposium on Infrastructure Engineering in Developing Countries (IEDC-2010) and 1 st International Conference on Sustainable Transportation & Traffic Management July 1-3, 2010. Karachi, Pakistan

Current Professional Affiliations

Department of Urban & Infrastructure Engineering, NED University of Engineering & Technology.