

Dr. Muhammad Shahzad Sarfraz

Professor of Computer Science

Director FAST-NUCES CFD Campus

+92-333-6574143

shahzad.sarfraz@nu.edu.pk



I am deeply engaged in the fields of Computer Science and Geospatial Technologies, where I spearhead core thematic areas encompassing ICT tools for Health, Agriculture, Disaster Management, Location-based Systems, associated GIS-based applications, and Educational data mining. My focus extends to leveraging web-based and machine learning open-source tools for Remote Sensing and GIS applications, as well as developing customized solutions to address organizational needs and readiness assessment. Furthermore, I specialize in evaluating location-based systems.

ACADEMIC & ADMINISTRATIVE RESPONSIBILITIES

1. Coordinate administrative functions including scheduling, budgeting, and resource allocation to ensure efficient campus operations.
2. Oversee compliance with institutional policies, regulations, and accreditation standards, maintaining a safe and conducive learning environment.
3. Continuous maintenance of departmental planning and establishing initiatives to reflect the university mission and vision.
4. Foster academic excellence by supporting faculty in curriculum development, assessment, and scholarly activities.
5. Promote student success through initiatives such as academic advising, student support services, extracurricular activities and graduates placements.

PROFESSIONAL EXPERIENCE

Director Campus National University of Computer and Emerging Sciences	August 01, 2020 – Present FAST-NUCES Pakistan
Head School of Computing Head Department of Computer Science National University of Computer and Emerging Sciences	March 01, 2022 – June 30, 2024 January 01, 2019 – July 31, 2020 FAST-NUCES, Pakistan
Associate Professor & Head Graduate Programs National University of Computer and Emerging Sciences	September 05, 2018 – December 31, 2021 FAST-NUCES, Pakistan
Director, Spatial Analytic Research (SAR) group , to conduct cutting-edge research on several real-world issues using Multispectral and Hyperspectral sensors.	
Associate Professor University of Gujrat	April 15, 2015 – September 05, 2018 Gujrat, Pakistan
Chairperson Computer Science Department Director Evening Programs	
Assistant Professor & Head Graduate Programs National University of Computer and Emerging Sciences	March 01, 2014 – April 14, 2015 FAST-NUCES, Pakistan

Assistant Professor
COMSATS Institute of Information Technology (CIIT)

December 31, 2012 – February 28, 2014
Abbottabad, Pakistan

Visiting Researcher
National Institute of Informatics, Tokyo (NII)

August 01, 2010 – March 31, 2011
Tokyo, Japan

Research Associate/PhD Fellow
Asian Institute of Technology (AIT)

January 15, 2008 – December 30, 2012
Pathum Thani, Thailand

Lecturer
COMSATS Institute of Information Technology (CIIT)

August 04, 2006 – January 14, 2008
Abbottabad, Pakistan

EDUCATION

Ph.D. in Computing (RS & GIS)
M.S. in Computing (RS & GIS)
Master's in Computer Science
Bachelor's in Computer Science

Asian Institute of Technology, Thailand, 2012
Asian Institute of Technology, Thailand, 2009
University of Agriculture, Pakistan, 2006
University of Punjab, Pakistan, 2004

PROFESSIONAL MEMBERSHIP

1. Senior Member, IEEE
2. Member, Pak One Health Alliance
3. Member, Geological Society of America
4. Member, Asian Society of Remote Sensing
5. Member, Canadian Remote Sensing Society
6. Member, Association for Computing Machinery (ACM)
7. Member, International Association of Chinese Professionals in GIS
8. Member, International Society for Photogrammetry and Remote Sensing

FUNDED PROJECTS, HONORS AND AWARDS

1. **HEC Funded Research Project** Vector-borne Infectious Diseases Surveillance and Response System using Earth Observation Data. Funding amount Rs. 4.8 Million.
2. **NUCES Faculty Research Support Grant (FRSG)** Awards of Worth Rs. 5.4 Million for the Year 2023-2025.
3. **HEC Travel Grant for Conference** to Present Research at Seventh International Conference on Remote Sensing and Geoinformation of Environment held during 18-21 March, 2018 at Cyprus.
4. **HEC Travel Grant for Conference** to Present Research at “Symposium on ”Developments, Technologies and Applications in Remote Sensing” during May 7-10, 2018 in Beijing China.
5. **Start-up Incubator** during 2016 & 2018 Business Plan Competition at University of Gujrat.
6. **HEC Travel Grant** for Presenting Research at “XXII International Society for Photogrammetry and Remote Sensing (ISPRS) Congress 2016” during July 12-19, 2016 in Prague, Czech Republic.

7. **Research Productivity Award** for the Year 2014 from COMSATS University Islamabad, Pak.
8. **Winner of ISPRS Travel Grant** for Presenting Research Results at “ISPRS TC VIII Mid-Term Symposium 2014” by ISPRS Foundation during 9-12 December, 2014 in Hyderabad, India.
9. **Winner of GSA-USA Travel Fund** for Presenting Research at “Geological Society of America, 2014” by GSA International Section held on 19-22 October, 2014 in Vancouver, BC, Canada.
10. **Winner of NASA Travel Award** for Presenting Research Results at “2nd Symposium on Advances in Geospatial Technologies for Health” by NASA held during August 25-29, 2013 in Arlington, USA.
11. **Best Oral Presentation Award** at the 1st International Conference on Health Science Thai Traditional and Alternative Medicine held during 21-23 Nov at Maha Sarakham, Thailand.
12. **ProSPER.NET Thesis Competition Prize** for Excellent Research Presentation held at Headquarter of United Nation (UN) University, Japan during August, 2011.
13. **HEC Scholarship** for M.S. leading to Ph.D.
14. **1st Position in the Department** of Computer Science, Batch-2006, University of Agriculture, Faisalabad, Pakistan.

SERVEICES RENDERED

1. Member Recruitment, Campus Director and Faculty at the KIT, RYK - Pak
2. Member, Finance and Planning Committee, UoG
3. Co-opted Member, Board of Governors, FAST-NUCES Islamabad
4. Member, Consultative Board, Khanpur Institute of Technology, RYK - Pak
5. Member, Committee on Reforms in Nursing Education in Punjab, PHEC, Punjab
6. Convener, Industry Advisory Board Committee, FAST School of Computing at CFD Campus
7. Member, Selection Board Meeting at Government College University Faisalabad
8. Subject Expert, Punjab Public Service Commission, Punjab
9. Member, Board of Studies, University of Education LHR, KFUEIT RYK, University of Sahiwal, PAF-IAST Haripur & NTU FSD
10. Member, Board of Faculty, Government College University, Faisalabad
11. Member, Faculty Selection/Promotion Board, NTU, Faisalabad
12. Head, Campus Research Committee at NUCES CFD Campus
13. Convener, Graduate Studies Committee (GSC) at FAST-NUCES CFD Campus
14. Subject Expert, DTRC Committee’s to Review the Annual Progress of NTU TTS Faculty
15. Member, Grievance Redressal Committee at NUCES CFD Campus
16. Convener, Selection Committee of Administrative Staff at NUCES CFD Campus

17. Convener, Board of Studies, Department of Computer Science, University of Gujrat (UoG)
18. Head, Hall Management Committee, FAST-NUCES CFD
19. Convener, Departmental Research and Review Committee (DRRC), UoG
20. External Examiner, NTU Graduate Assessment Test (NTU GAT-Subject) for Admission to Ph.D
21. Member, Business Incubation Centre Advisory/Mentor Committee, UoG
22. External Examiner, NTU & Riphah University FSD; KFUEIT RYK, COMSATS University Islamabad - Sahiwal Campus, Lahore College for Women University/PUCIT/UET Lahore
23. Focal Person, NCEAC Accreditation Programs for Faculty of Computing & IT, UoG & NUCES
24. Member, Departmental Research and Review Committee (DRRC), Department of IT, UoG
25. Member, of Drafting and Proposing ORIC Policy of UoG
26. Convener, Campus Management Committee (CMC), FAST-NUCES CFD
27. Convener, Online Admission Data Cell for the Year 2015, UoG
28. Member, PEEF Scholarship Committee for Master level Programs for the Year 2016-17, UoG
29. Member, National Curriculum Revision Committee (NCRC) of Higher Education Commission on Remote Sensing & Geographical Information Systems
30. Member, National Grassroots ICT Research Initiative (NGIRI, 2015-16) for National level Competition Organized by Ministry of Information Technology, Pakistan
31. Member, Committee of Academia-Industry Linkages, UoG
32. Judge, Induction of Startups on Launchpad for PITB Incubation Wing
33. Judge and Evaluator, Prime Minister's Youth Skills Development Program
34. Member, PhD Fellowship Selection Committee, FAST-NUCES Islamabad
35. Member, Trainers Selection Committee for Sports, UoG
36. Head, Admission Committee at FAST-NUCES CFD Campus
37. Block In-charge, UET Entry Test 2016 at UoG
38. Judge and Evaluator, HULT Prize Business Idea Competition
39. Member, Board of Faculty, GC University, Faisalabad
40. Member, Selection Committee for Administrative Posts in BPS-17 and above at UoG
41. Member, Departmental Tenure Review Committee (DTRC) of TTS, GC University, Faisalabad
42. Paper Setter/Moderator, Annual System of Examination for 2016-2019, UoG
43. Co-opted Member, Reviewing/Negotiating Corporate Health Insurance Plan for UoG Employees
44. Member, Business Plan Competition Committee UoG

45. Subject Expert/Convener, Selection Committee for Appointment of Faculty on Contract-basis at UoG Hafiz Hayat, Lahore and Sialkot Campuses
46. Member, Scholarship Award Committee, UoG
47. Convener, NCEAC Accreditation Committee at UoG & FAST-NUCES CFD Campus
48. Member, Academic, and Financial Audit UoG, Lahore Campus
49. Member, Academic Council of UoG and NUCES
50. Member, Faculty/Administrative Staff Academic Audit Committee, Sub-campus LHR (PPP)
51. Member, Appellate Committee to Review Cases of Students Appeals
52. Convenor, PhD Program Teams (PT) for Self-assessment Report, UoG
53. Convener, Exam Supervisory Committee (ESC), FAST NUCES CFD Campus
54. Critic/Inspector, End Term Examination Spring-2017, UoG
55. Member, Internal Scholarship Award Committee (ISAC) for HEC Need-based Scholarship and Tuition-fee Concession for the Year 2017-2018
56. Member, IT Equipment Committee for Strengthening/overseeing and Smooth Proceedings of the Procurement Process of the Equipment, UoG
57. Convener, Curriculum/Exam Committee, UoG
58. Member, Preparing TORs of MOUs for Academic Collaboration b/w UESTC, China and UoG
59. Member, Implementation of Roles to Accelerate the Academia-Industry Linkages, UoG

WORKSHOPS/CONFERENCES ORGANIZED

1. Program Committee Co-Chair, 2024 IEEE Belt and Road Congress on AI for Sustainable Development held during 22-23 June, 2024 at Hangzhou, China
2. Session Chair, 5th International Conference on Advancements in Computational Sciences (ICACS) held during 19-20 February, 2024 at University of Lahore, Pakistan
3. Guest of Honour, 3rd IEEE Summit on Artificial Intelligence in Information and Communication held of November 2, 2023 at University of Faisalabad
4. General Chair & Host, International Conference on IT and Industrial Technologies (ICIT) held during October 09-10, 2023 Chiniot, Pakistan
5. Guest of Honour, 4th International Conference on Computing, Mathematics and Engineering Technologies (iCoMET) held during 17-18 March, 2023 at Sukkur IBA University, Pakistan
6. Organizer, Workshop on Opportunity of Research and Academic Collaboration between Pakistan and Scandinavian Universities held on March 14, 2023 at Higher Education Commission, Pakistan
7. Session Chair, 4th International Conference on Advancements in Computational Sciences (ICACS) held during 20-22 February, 2023 at University of Lahore, Pakistan

8. Member, Technical/Scientific Committee for International E-Conference on Bio polymer, Smart and Engineering Materials 2022- ICBSEM2022 held during November 25-26, 2022 at Ethiopia
9. Member, Steering Committee on 17th ICET Conference held during 29-30 November 2022 at GIKI, Pakistan
10. Organized, Hands-on One Day Training Workshop on Outcome Based Education held on Thursday August 04, 2022
11. Organized, Workshop on Emotional and Social Quotient for Effective Pedagogical Skills held on Thursday August 04, 2022
12. General Chair & Host, International Conference on IT and Industrial Technologies (ICIT) held during October 03-04, 2022 Chiniot, Pakistan
13. Organizer, Awareness Session on Challenges to National Security and Our Role as Citizens on 31 December 2021
14. Venue Partner & Organizer, Pakistan IT Professionals Conference (PIPC) held during 8-9 December, 2021 at FAST-NUCES CFD Campus
15. Organized, Seminar on Coordination and Team Management: From a Team Lead Perspective held on Monday, November 15, 2021
16. Session Chair, Technical Session: Big Data Analytics in Health, Machine Learning and Artificial Intelligence during 7th International Conference on Health GIS: Geo Intelligence for Smart Healthcare on February 25-26, 2021
17. Organized, Workshop on Enabling Excellence at Higher Education Institutions (HEIs) held on Wednesday January 27, 2021 at FAST-NUCES CFD Campus
18. Organizer, Training on Quality Hygiene & Hospitality held during 8-9 January 2021 at FAST NUCES-CFD
19. Organized, Pedagogical and Assessment Techniques for Hybrid Education by Dr. Shaihd Qamar Research Scientist at the University of Louisville, Kentucky USA held on Thursday August 27, 2020
20. Organizer, TechStars Startup Weekend Faisalabad In partnership with Google for Startups on 29 November 2019
21. Organizer, TEDx held on 6th April, 2016 at Library Auditorium UoG
22. Organizer, Summit of Emerging Technologies on April 14, 2016 at Library Auditorium UoG
23. Organizer, TECHIE Empowerment Summit held on April 29, 2016 at UoG
24. Organizer, E-Gamming and Programming Competition held on April 21 and 25, 2016 at UoG
25. Organizer, 4th International Workshop on Frontiers of Information Technology during December 20-21, 2006 Islamabad Pakistan, Organized by COMSATS Institute of Technology and sponsored by Higher Education Commission (HEC) Pakistan

WORKSHOPS/EVENTS AND CONFERENCES PARTICIPATED

1. Workshop on AI for K-12 Classrooms held on 21 September 2024 at LUMS, Pk
2. Workshop on Designing Effective Online Learning Experiences held on 21 September 2024 at LUMS, Pk
3. International Conference on Accreditation and Internationalization in South Asian HEIs held on 03 June 2024 at HEC Islamabad, Pakistan
4. Workshop on SSAPI (Strategies Support for accreditation of program and Internationalization of South Asian Higher Education Institutes Training) held on 25-29 May 2024 at FAST NUCES Islamabad, Pakistan
5. International Conference on Emerging trends in Artificial Intelligence and Cyber Security held on 15-17 May 2024 at KFUEIT Rahim Yar Khan, Pakistan
6. Workshop on Higher Education Development and University-Industry Cooperation jointly organized by Jiangxi University, Fudan University, and Peking University from April 16th, 2024 to April 25th, 2024 in Nanchang, Shanghai, Beijing of China.
7. Glimpse to a Modern Pakistan/French-Pakistani Cooperation in Higher Education on November 1, 2022, at LUMS organized by the Embassy of France in collaboration with Campus France
8. Artificial Intelligence Connect Conference organized by Motive's on July 2022 at PC Lahore
9. International Conference on Substance Abuse, Prevention and Treatment on 11 June 2022, Organized by the Department of Psychology, National University of Medical Sciences (NUMS)
10. Advance Optical Fiber Systems and Li-Fi Demonstration held on August 26, 2021, organized by EPTech and FAST-NUCES CFD Campus
11. Tech Education and Covid-19 organized by Open Islamabad Annual Forum on 23 August 2020 at PNCA, Islamabad
12. Workshop on Importance of Institutional Performance Evaluation (IPE) at Higher Education Institutions (HEIs) at FAST NUCES CFD delivered by Dr. Riaz Ahmed Director Quality Assurance and Amp International Collaboration NUST held on Friday June 21, 2019.
13. Workshop on Design & Development of Curriculum and its Assessment Techniques organized by FAST NUCES CFD on March 14, 2019
14. ISPRS Student Consortium Summer School on Big Geosensing Data Ecosystem: Theory, Processing & Application held during 20-24 October 2018 at UTM Kuala Lumpur, Malaysia
15. The 39th Asian Conference on Remote Sensing (ACRS 2018) Jointly Organized by the Malaysian Remote Sensing Agency and Asian Association on Remote Sensing held during 15-19 October 2018 at Kuala Lumpur, Malaysia
16. Data Science Boot Camp Organized by HEC and NUCES during January 9-13, 2017
17. 5-Day HEC Indigenous On-Campus Training Organized by ORIC Office at UoG, Pakistan during June, 2015
18. Workshop on Encouraging Problem-Solving Research Policy for Enabling Environment on 17-June-2014 organized by Pakistan Science Foundation, PCST, PHMA & IRP, Pakistan

19. Workshop on Intuitive Image analysis with ENV15.0, organized by Geoinformatics Center AIT Bangkok on May 2-3, 2012 Organized by Exelis Osaka, Japan
20. Strategies for Urban Flooding Management Jointly organized by AIT, Polytech, University of Sophia Antipolis/Polytech Nice Sophia and the National University of Singapore/DLR German Space Agency, Germany during 28-29 June 2012
21. Expert Group Meeting on Geo-Reference Disaster Risk Management Information System in Asia-Pacific Region, during 15-17 February 2012. Organized by UN-ESCAP (Economic and Social Commission for Asia and the Pacific)
22. Winter School in Water Quality and Testing jointly organized by Mutah University, BEN Hayyan and DAAD held during 2-9 April 2011 at Jordan
23. 2011 ProSPER.Net Young Researchers' School on Learning from Japan's Experience on Urban Sustainability, Organized by Hosei University, Japan, 1-12 August 2011
24. The Royal Thai Air Force Academy English Camp Project during 19-21 April 2010 at Samut Songkram, organized by AIT Career Center, Thailand
25. Professional Development Needs Assessment and APMAS Startup Workshop during 6-11 July 2010 organized by AIT Extension (Professional Education for Capacity Building) and sponsored by IFAD (International Fund for Agricultural Development)
26. International Conference on Sustainable Development in the Context of Climate Change, Asian Institute of Technology during 24-25 September 2009 sponsored by UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific)
27. 2nd International Conference on Geoinformation Technologies for Natural Disaster Management, & Rehabilitation held during 30-31 January 2009 at Thailand
28. International Training Course under ProGENY Project on Global Navigation Satellite System (GALILEO) Education Tools during November 21-22 2008 organized by ISMB and Politecnico di Torino, Italy
29. Symposium on Pedagogy, organized by FAST-NUCES, Pakistan
30. 2nd Annual Business & Technology Conference (BIZTECH'15), FAST-NUCES, Pakistan

LIST OF SELECTED PRESENTATIONS

1. The Blockchain Based Industrial IoT and Hyperspectral Data Using Deep Learning for Sustainable Development during June 22-23, 2024, China
2. Invited Talk, during Belt and Road Forum on Digital Earth (BRFonDE 2023), December 6-8, 2023 at Beijing China
3. Keynote Speech, on 5th International Conference of Computer Science and Allied Technologies 2023 (ICCSAT-2023) at Lahore Garrison University during November 22-23, 2023
4. Panelist, Ecommerce Pro - Agencies & Freelancers Summit at Lahore Chamber of Commerce & Industry on 16-July, 2022
5. Panelist, 14th IEEE Pakistan Student/YP/WIE/SIGHT Congress during 26-27 February 2022 at Faisalabad

6. Panelists, for Leaders Talks on Bridging Academia/Industry for Cyber Maturity at BSides Islamabad 7-8 November 2020
7. Invited Discussion, on Eco-System of Faisalabad - Challenges & Opportunities organized by Askolay on 8th October 2020
8. Invited Talk, "Tech Education and COVID-19" organized by Startup Grind on 22nd August 2020
9. Oral Presentation, at 7th International Conference on Remote Sensing and Geoinformation of Environment, organized by Cyprus Remote Sensing Society held during March 18-21, 2019
10. Oral Presentation, at ISPRS Technical Commission Symposium on Developments, Technologies and Applications in Remote Sensing held during May 07-10, 2018 Beijing China
11. Invited Speaker, during AgMIP-Pakistan for Climate Change Adaptation Strategies on Ensure Food Security during 16-17 January 2014 at UAF, Pakistan
12. Guest Speaker, for Seminar on Emerging Technologies and Trends in Computer Science held on January 18, 2014 at UAF, Pakistan
13. Trainer, for 3 Days Workshop on Innovative Statistical Tools for Data Analysis "SPSS, GIS & SARA (WHO)", organized by WHO and Institute of Public Health Pakistan during January 21-23, 2014
14. Invited Talk, Consultative Meeting for eHealth Strategic Planning on "Vision and Key Components for eHealth" organized by WHO, Govt. of Pakistan and COMSATS during 1-2 May, 2014
15. Invited Talk, at International Seminar on "Climate Change Adaptation Strategies to Ensure Food Security" held at University of Agriculture, Faisalabad from Jan 16-17, 2014 organized by AgMIP, Pakistan and Washington State University, USA
16. Trainer, Use of Innovative Statistical Tools for Data Analysis (SPSS, GIS & SARA) at Institute of Public Health, Lahore Organized by WHO from January 21-23, 2014
17. Trainer, Workshop on Geographical Information System for Water Management Officers during 09-10 December, 2013 conducted by Water Management Training Institute, Lahore
18. Invited talk on GIS Applications for Health on Fourth International eHealth Conference during 22-23 November 2013 at Karachi organized by eHealth Association of Pakistan
19. Keynote Speech, at ICBIM 2013, International Society of Universal Research in Science, Pakistan held during 27-28 April 2013 at Abbottabad, Pakistan
20. Delivered Talk, on Geo-Spatial Technologies for Spatial Epidemiology, on 9th ISPRS Summer School held during 25-30 October, 2013 Bali Indonesia
21. Invited Talk, on Geo-Information technologies for Social Issues at 11th International Conference on Frontiers of Information Technology (FIT) held at Islamabad, Pakistan from 16-18 Dec 2013 supported by IEEE CS Society.
22. Oral Presentation, on Remote Sensing & GIS tools for Public Health at 4th International eHealth Conference held at Karachi, Pakistan during 22-23 Nov 2013
23. Invited Talk, Geo-spatial Technologies for Monitoring Climate and Environment at 34th ACRS Summer School held at Bali, Indonesia during 25-31 Oct 2013

24. Oral Presentation, on Identification of Urban and Peri-urban Favorable Breeding Habitat for Aedes mosquitoes at 2nd Symposium on Advances in Geospatial Technologies for Health at Arlington, VA, USA during 25-30 August 2013
25. Oral Presentation, on Crop Identification, Forecasting, and Stress Detection using Hyper Spectral Remote Sensing Sydney Convention and Exhibition Center 10-15 April 2011, Australia
26. Trainer, Advance Satellite Image Processing for LULCM Project for Bhutan from 26-March to 13 April, 2012 at Asian Institute of Technology (AIT), Thailand
27. Trainer, GIS and Remote Sensing in Irrigation Planning, from 6-June to 1-July, 2011, Organized by AIT and supported by “Ministry of Energy and Water (MEW), Afghanistan
28. Oral Presentation, on Role of Remote Sensing to Extract Water Quality Parameters and its Management organized by EXCEED (Technische Universitat Braunschweig Germany) and Mutah University Jordan, Sponsored by DAAD on 6th April 2011 Aqaba, Jordan
29. Oral Presentation, at 3rd International Conference on Geoinformation Technology for Natural Disaster Management & Rehabilitation during 19-20 October, 2010 at Chiang Mai, Thailand
30. Poster Presentation, on Geospatial Characterization of Dengue Risk in Urban Environment during 26-28 July 2010 at Map Asia & ISG 2010 Malaysia
31. Presentation, on “Vector-borne Diseases and Role of Remote Sensing & GIS, Current & Future Research Perspective” for Outreach International Participant from Department of Remote Sensing, Faculty of Geoinformation Science & Engineering, University Technology of Malaysia on 16th December-2009

SELECTED PUBLICATIONS

1. Cheema, Adeel Ashraf and Sarfraz, Muhammad Shahzad and Usman, Muhammad and Zaman, Qamar Uz and Habib, Usman and Boonchieng, Ekkarat ”KT-CDULF: Knowledge Transfer in Context-Aware Cross-Domain Recommender Systems via Latent User Profiling” in IEEE Access, July 2024.
2. M. Usman, M. S. Sarfraz, M. U. Aftab, U. Habib and S. Javed, “A Blockchain Based Scalable Domain Access Control Framework for Industrial Internet of Things,” in IEEE Access, vol. 12, pp. 56554-56570, April 2024.
3. Usman Ghous, Muhammad Shahzad Sarfraz, Muhammad Ahmad, Chenyu Li, Danfeng Hong, “(2+1) D Extreme Xception Net for Hyperspectral Image Classification”, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Earth and planetary sciences PP (99):1-14, (IF:5.5), January 2024.
4. Rabia Maqsood, Paolo Ceravolo, Muhammad Ahmad, & Muhammad Shahzad Sarfraz, “Examining students’ course trajectories using data mining and visualization approaches”, International Journal of Educational Technology in Higher Education, Springer Netherlands, (JCR IF=7.611), October 2023.
5. Ariyo Oluwasanmi, Muhammad Umar Aftab, Zhiguang Qin, Muhammad Shahzad Sarfraz, Yang Yu, and Hafiz Tayyab Rauf, “Multi-Head Spatiotemporal Attention Graph Convolutional Network for Traffic Prediction”, Multidisciplinary, MDPI & Switzerland, (IF. 3.847), April 2023.

6. Momna Javaid, Muhammad Shahzad Sarfraz, Muhammad Umar Aftab, Qamar uz Zaman, Hafiz Tayyab Rauf, and Khalid A. Alnowibet, "WebGIS-Based Real-Time Surveillance and Response System for Vector-Borne Infectious Diseases", *International Journal of Environmental Research and Public Health*, Multidisciplinary, MDPI & Switzerland, (IF. 4.614), 2023.
7. Mahnoor Khalid, Muhammad Shahzad Sarfraz, Uzair Iqbal, Muhammad Umar Aftab, Gniewko Niedbala, and Hafiz Tayyab Rauf, "Real-Time Plant Health Detection Using Deep Convolutional Neural Networks", *Agriculture*, Multidisciplinary, MDPI & Switzerland, (IF. 3.408), 2023.
8. Samia Aziz, Muhammad Shahzad Sarfraz, Muhammad Usman, Muhammad Umar Aftab, and Hafiz Tayyab Rauf, "Geo-Spatial Mapping of Hate Speech Prediction in Roman Urdu", *Mathematics*, Computer Science, MDPI & Switzerland, (IF. 2.595), 2023.
9. M.H. Musaddiq, M.S. Sarfraz, N. Shafi, R. Maqsood, A. Azam, M. Ahmad, "Predicting the Impact of Academic Key Factors and Spatial Behaviors on Students' Performance", *MDPI*, Switzerland, (IF. 2.838), 2022.
10. Aftab, M. U., Hamza, A., Oluwasanmi, A., Nie X., Sarfraz, M. S., Shehzad, D., Qin, Z., & Rafiq, A. Traditional and Hybrid Access Control Models: A Detailed Survey. *Security and Communication Networks*, 2022.
11. Khan, M. A., Nasralla, M. M., Umar, M. M., Iqbal, Z., Rehman, G. U., Sarfraz, M. S., & Choudhury, N. (2021). A Survey on the Noncooperative Environment in Smart Nodes-Based Ad Hoc Networks: Motivations and Solutions. *Security and Communication Networks*, 2021.
12. Jalbani, K. B., Yousaf, M., Sarfraz, M. S., Jamili Oskouei, R., Hussain, A., & Memon, Z. Poor Coding Leads to DoS Attack and Security Issues in Web Applications for Sensors. *Security and Communication Networks*, 2021.
13. Memon, Z., Aghian, H., Sarfraz, M. S., Hussain Jalbani, A., Oskouei, R. J., Jalbani, K. B., & Hussain Jalbani, G. (2021). Framework for Educational Domain-Based Multichatbot Communication System. *Scientific Programming*, 2021.
14. Tariq, H., Hanif, M. K., Sarwar, M. U., Bari, S., Sarfraz, M. S., & Oskouei, R. J. Employing Deep Learning and Time Series Analysis to Tackle the Accuracy and Robustness of the Forecasting Problem. *Security and Communication Networks*, 2021.
15. Ali, H., Rafique, M. Z., Sarfraz, M. S., Malik, M. S. A., Alqahtani, M. A., & Alqurni, J. S. A novel approach for solving travelling thief problem using enhanced simulated annealing. *PeerJ Computer Science*, 7, e377.
16. Xiao, H., Ali, S., Zhang, Z., Sarfraz, M. S., Zhang, F., & Faisal, M. Big Data, Extracting Insights, Comprehension, and Analytics in Cardiology: An Overview. *Journal of Healthcare Engineering*. Hindawi.
17. Ahmad, M., Khan, A. M., Mazzara, M., Distefano, S., Ali, M., & Sarfraz, M. S. A Fast and Compact 3-D CNN for Hyperspectral Image Classification. *IEEE Geoscience and Remote Sensing Letters*.
18. Khan, M. A., Sarfraz, M. S., Alhaisoni, M., Albeshir, A. A., Wang, S., & Ashraf, I. StomachNet: Optimal Deep Learning Features Fusion for Stomach Abnormalities Classification. *IEEE Access*.
19. Umair, A., Sarfraz, M. S., Ahmad, M., Habib, U., Ullah, M. H., & Mazzara, M. Spatiotemporal Analysis of Web News Archives for Crime Prediction. *Applied Sciences*, 10(22), 8220.

20. Khan, M. A.; Seifedine, K.; Majed A.; Yunyoung N.; Yudong Z.; Venkatesan R.; and Sarfraz, M. S. "Computer-Aided Gastrointestinal Diseases Analysis From Wireless Capsule Endoscopy: A Framework of Best Features Selection. *IEEE Access* 8(2020), 132850-132859.
21. Ahmad, M.; Mazzara, M.; Raza, R.A.; Distefano, S.; Asif, M.; Sarfraz, M. S.; Khan, A.M.; Sohaib, A. Multiclass Non-Randomized Spectral–Spatial Active Learning for Hyperspectral Image Classification. *Appl. Sci.* 2020, 10, 4739.
22. Tariq M. Imran., Shahzadi T., Ali M. Natash, Sarfraz M. S. Hussain Akhtar, Imran M. Pricop Emil, Candia O, Paraschiv N. "Combination of AHP and TOPSIS methods for the ranking of information security controls overcome its obstruction under fuzzy environment." *Journal of Intelligent and Fuzzy Systems*, Vol. 38, no.5, pp.6675-6088, (2020).
23. Ashraf, M. Waseem., Manzoor Saher. Sarfraz M. S. Waseem M. Faisal., Ali Basic., Akhlaq M., Rujita C., Pupa Alex., "Fabrication and fuzzy analysis of AAO membrane with manipulated pore diameter for applications in biotechnology". *Journal of Intelligent and Fuzzy Systems*, vol. 38, no. 5, pp. 5857-5864, (2020)
24. Tariq M. Imran., Shahzadi T., Ali M. Natash., Sarfraz M. S. Hussain Akhtar, Imran M. Pricop Emil, Candia O, Paraschiv N. "Intelligent data analysis and applications & smart vehicular technology, communications and applications" *Journal of Intelligent and Fuzzy Systems*, vol. 38, no. 5, pp. 5933-5947, (2020).
25. Khan, A., Shoaib, U., & Sarfraz, M. S. (2019). A Comprehensive Study of Modern and High-Speed TCP-Variant in Linux Kernel: TCP CUBIC. *The International Arab Journal of Information Technology*.16(6). 1028-1035.
26. Akram, A., Sarfraz, M. S. & Shoaib U. (2019). HLA Run Time Infrastructure: A Comparative Study. *Mehran University Research Journal of Engineering & Technology*. 38(4), 961-972.
27. Aurangzeb K., Haider I., Khan M.A., Saba T., Sarfraz, M.S., (2019). Human Behavior Analysis based on Multi-types Features Fusion and Von Nauman Entropy based Features Reduction. *Journal of Medical Imaging and Health Informatics*. 9(4), 662-669.
28. Hassan, J., Sarfraz, M. S. (2019). Impact of suicide bombings in Pakistan using spatial and temporal analysis. In *Seventh International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2019)* (Vol. 11174, p. 111740S). International Society for Optics and Photonics.
29. Shakoor A., Ahmed A., Sarfraz, M.S. (2018). Security Technique in Mobile Clouds to Ensure Malware Prevention. *Indian Journal of Science and Technology*. *Indian Journal of Science and Technology*, 11(31).
30. Naz, N. A., Shoaib, U., & Sarfraz, M. S. (2018). A Review on Customer Churn Prediction Data Mining Modeling Techniques. *Indian Journal of Science and Technology*, 11(27).
31. Rana, M. F., Shoaib, U., Sarfraz, M. S. (2018). Ergonomics Estimation and Dimensions of ATM Usage in Pakistan. *Indian Journal of Science and Technology*. *Indian Journal of Science and Technology*, 11(24).
32. Baig, S., & Sarfraz, M. S. Spatio-temporal Analysis to Predict Environmental Influence on Malaria. *Proceedings of ISPRS TC III Mid-term Symposium "Developments, Technologies and Applications in Remote Sensing held in Beijing, China during May 7-10, 2018.*

33. Rana, I. A., Aslam, S., Sarfraz, M. S., & Shoaib, U. (2018). Analysis of Query Optimization Components in Distributed Database. *Indian Journal of Science and Technology*, 8(1).
34. Mahmood, A., Shoaib, U., & Sarfraz, M. S. (2018). A Recommendation System for Cloud Services Selection based on Intelligent Agents. *Indian Journal of Science and Technology*, 11(10).
35. Nazar, H., Sarfraz, M. S., & Shoaib, U. (2017). Web Accessibility Evaluation of Banking Website in Pakistan. *International Journal of Computer Science and Information Security*, 15(1), 642.
36. Noureen, A., Shoaib, U., & Sarfraz, M. S. (2017). Secure Device Pairing Methods: An Overview. *INTERNATIONAL Journal of Advanced Computer Science and Applications*, 8(9), 442-451.
37. Riaz, A., Shoaib, U., & Sarfraz, M. S. (2017). Workplace Design and Employee's Performance and Health in Software Industry of Pakistan. *International Journal of Advanced Computer Science and Applications*, 8(5), 542-548.
38. Azeem, M. W., Sarfraz, M. S., & Shoaib, U. (2016). Comparison of Different Techniques for Detecting Malware in Smartphones. *International Journal of Computer Science and Information Security*, 14(5), 642.
39. Rasheed, A., Shoaib, U., & Sarfraz, M. S. (2016). Performance evaluation of Keystone in cloud (OpenStack) for applications in Disaster Management & Recovery. *International Journal of Computer Science and Information Security*, 14(11), 202.
40. Rahman, A., Sarfraz, M.S., Shoaib, U., Abbas, G., & Sattar, M. A. (2016). Cloud based E-Learning, Security Threats and Security Measures. *Indian Journal of Science and Technology*, 9(48).
41. Tabassum, H., Shoaib, U., & Sarfarz, M. S. (2016). Tools and Techniques for Predicting User Browsing Behavior by using Web Usage Mining. *International Journal of Computer Science and Information Security*, 14(11), 519.
42. Rashid, A., Shoaib, U., & Sarfraz, M. S. (2016). Knowledge Discovery in Database using Intention Mining. *Science International-Lahore*, 28(6), 5145-515.
43. Mir, S. S., Shoaib, U., & Sarfraz, M. S. (2016). Analysis of Digital Forensic Investigation Models. *International Journal of Computer Science and Information Security*, 14(11), 292.
44. Razzaq, S., Shoaib, U., & Sarfraz, M. S. (2016). Evaluation of Image Services in Open Source Clouds for Disaster Management. *International Journal of Computer Science and Information Security*, 14(11), 398.
45. Arshad, M., Nawaz, R., Shahnawaz, M., Sarfraz, M. S., Ahmad S., & S. L. Ranamukhaarachchiet. (2015). First and second generation bioethanol production in sweet sorghum, mungbean and soybean in sole and intercropping systems. *Trop. Agric*, 41(3216), 010035-14.
46. Arshad, M., Nawaz, R., Shahnawaz, M., Sarfraz, M. S., Ahmad, S., & Ranamukhaarachi, S. L. (2014). Effect of Legume type, Nitrogen Dose and Air Quality on Biomass and Bioethanol Production in Sweet Sorghum-Legume Intercropping. *Poljoprivreda i Sumarstvo*, 60(3), 257.
47. Sarfraz, M. S., Tripathi, N. K., Faruque, F. S., Bajwa, U. I., Kitamoto, A., & Souris, M. (2014). Mapping urban and peri-urban breeding habitats of *Aedes* mosquitoes using a fuzzy analytical hierarchical process based on climatic and physical parameters. *Geospatial health*, 8(3), 685-697.

48. Nawaz, R., Arshad, M., Sarfraz, M. S., Ashraf, M.W., Hayyat, M.U., Mahmood, R., and Parkpian, P. (2014). Interactions between Acidic (Al³⁺, Fe²⁺) and Basic (Ca²⁺, Mg²⁺) Cations in Oxisol and Ultisol under Acidification Induced by Simulated Acid Rain. *Asian Journal of Chemistry*. 269(15), 4794-4800.
49. Sarfraz, M. S., Tripathi, N. K., & Kitamoto, A. (2014). Near real-time characterisation of urban environments: a holistic approach for monitoring dengue fever risk areas. *International Journal of Digital Earth*, 7(11), 916-934.
50. Sarfraz, M. S., Tripathi, N. K., Kitamoto, A., and Souris, M. Identification of Urban and Peri-urban Favorable Breeding Habitat for Aedes Mosquitoes. At 2nd symposium on advances in geospatial technologies for health at Arlington, VA, USA during 24-30 August, 2013.
51. Asif, M., Sarfraz, M. S., Ahmed, M. S., & Tripathi, N. K. (2013). A Two Factor Based Anti-Phishing Method in Open ID. *Journal of Basic and Applied Scientific Research*. 3(12), 26-33.
52. Arshad, M., Cheema, T. A., Ahmad, S., Nawaz, R., Sarfraz, M. S., Shrestha, R. P., & Ranamukhaarachchi, S. L. (2013). Yield Comparison of Nonstructural Carbohydrates in Sweet Sorghum and Legume-Based Cropping Systems. *Communications in Soil Science and Plant Analysis*, 44(14), 2186-2206.
53. Sarfraz, M. S., Tripathi, N. K., Tipdecho, T., Thongbu, T., Kerdthong, P., & Souris, M. (2012). Analyzing the spatio-temporal relationship between dengue vector larval density and land-use using factor analysis and spatial ring mapping. *BMC public health*, 12(1), 853.
54. Shahzada, H., Tripathi, N.K., and Sarfraz, M. S. Geo-spatial site suitability for medicinal plants in Chiang Mai, Thailand. At the 1st International Conference on Health Science, Thai Traditional and Alternative Medicine, Mahasarakham University, Thailand during November, 21-23, 2012.
55. Sarfraz, M. S., Arshad, M., and Tripathi, N. K. Evaluation Of Ground Hyperspectral Remote Sensing For Precise Satellite Imagery Based Land Cover Classification And Forecasting Of Rice Grain Production. Proceedings of 34th International Symposium on Remote Sensing of Environment, held in Sydney Australia during April 10-15, 2011.

THESES SUPERVISION

- | | |
|---|-----------------------|
| 1. Muhammad Haseeb Arshad
Vulnerable Disease Prediction Using Remote Sensing/GIS | 2023 - Present
PhD |
| 2. Umer Iqbal
Discovering Archaeological Sites and Land Cover/land-use Change in Chiniot using Remotely Sensed Images | 2024 - Present
PhD |
| 3. Awais Azam
A Cross-Domain Recommendation Approach with Aspect-Based Sentiment Analysis and Transfer Learning for Cold Start Challenges | 2023 - Present
PhD |
| 4. Adeel Ashraf Cheema
Latent User-profiling for IoT facilitated Cross Domain Recommender Systems | 2021- Present
PhD |
| 5. Muhammad Usman
A Blockchain based Hybrid Access Control Model for IoT using Machine Learning | 2021- 24
PhD |

6. **Ch. Usman Ghous** 2020 - 24
Active Transfer Learning for Hyperspectral Image Classification PhD
7. **Mr Shahbaz Ahmed** 2014 – 20
Web GIS-based Surveillance and Prediction System for Dengue Virus in Punjab Pakistan Ph.D.
8. **Mr. Rameez Ahmed** 2023 – present
AI-Driven Flood Impact Analysis on Agriculture in Pakistan using Remote Sensing MS
9. **Esha Iftikhar** 2023 – present
Object Detection for Indoor Scene Using Deep Learning MS
10. **Wania Fatima** 2022 – 24
Influential Factors Affecting Students Academic Performance in Online Education MS
11. **Kashaf Shakoor** 2021 – 23
Dengue Risk Assessment Using real Time Climate and Environment Staellites Data MS
12. **Areeba Waseem** 2021 – 23
Trajectory and Hotspot Analysis of Hate Speech on Social Media Networks MS
13. **Malahat Fatima** 2017 – 21
Geo Spatial Technologies for Real Time Monitoring of Vector borne Diaseases and Forecasting Possible Threats MS
MS Geo Spatial Mapping of Hate Speech Prediction in Roman Urdu MS
14. **Aroosa Razzaq** 2019 – 21
Maize Plants Disease Classification Using Multispectral Images MS
15. **Rameen Zehra** 2018 – 21
Temporal and Spatiotemporal Sentiment Analysis of Tourists on Flicker MS
16. **Muhammad Hammad Musaddiq** 2018 – 21
Geospatial and Machine Learning Techniques for Predicting Students Academic Performance MS
17. **Talha Munir** 2018 – 21
Air Pollution Prediction affecting Acute Respiratory Infection Disease using Remotely Sened Images MS
18. **Nida Hussain** 2018 – 21
Environmental Constraints of Optimization Crop Yield Prediction MS
19. **Noor Asim** 2018 – 21
Weed Identification using Vegetation indices and Multispectral UAV Imaging MS
20. **Ms Farwa Ahmad** 2017 – 20
Expert Recommendation System in Community Question Answering Forum Based on Users Profiles MS
21. **Ms Areeba Umair** 2018 – 20
Prediction of Career Projection Trajectories of Pakistani Graduates using LinkedIn Data M.Phil.

22. Ms Sahar Ajmal PUB-VEN: A Hybrid Expert System for Suggesting Publication Venue	2017 – 19 M.Phil.
23. Ms Maryam Saeed Web-based Intervention and Analysis System for the Parents of Depressed and Anxious Adolescent	2016 – 18 M.Phil.
24. Ms Madiha Spatial Inter-relationship of Quality of Life with Socio and Demographic Factors	2016 – 18 M.Phil.
25. Mr Shahbaz Baig Analysing Spatial Dependencies of Contaminated Crops using Geospatial Technologies	2015 – 17 M.Phil.
26. Ms Rafia Ilyas Effective Solution of University Time Tabling using Practical Swarm Optimizer	2012 – 14 M.Phil.
27. Mr Abdul Shakoor Security Technique in Mobile Clouds to Ensure Malware Prevention	2010 – 12 M.Phil.

ACTIVITIES CONDUCTED AND SUPERVISED

1. Convocations	2019, 2021
2. New Students Orientations	2019, 2021
3. Semester Positions Medal Distribution	2019, 2021
4. Pakistan Engineering Council Visits	2019, 2021
5. National Computing Education Accreditation Council Visits	2017, 2019, 2020
6. Institutional Performance Evaluation Visits	2019, 2020,
7. Faculty Development Workshops & Book Fair	2021
8. Self Assessment Visits of BS/MS/PhD Programs Visits	2019, 2020, 2021
9. Industrial Advisory Board Meetings	2019, 2021
10. Job Fair at FAST-NUCES CFD Campus	2019, 2021
11. Alumni Home Comings	2019, 2021
12. Daira (Extra and Co-Curriculum Activities Events)	2019
13. Launch of New Degree Programs PhD (CS & EE), MS (CS & DS), , BS (AI & SE, Business Analytics, BS FinTech, and BS Technology)	

DEVELOPMENT PROJECTS COMPLETED IN CFD CAMPUS

Year	Description	Budget
2020-21	Separate Feeder Line from Grid, Grass cultivation in Cricket Ground, Construction of Students' Facilitation Center	351.02
2021-22	Construction of Girls' Hostel, Installation of Lift, Solar Parking Shed, Futsal Ground, Construction of stage, Street Lights Installation, Paver Work, Medical Center, Fitness Center	1239.45
2022-23	Construction of Data Science and AI Block, Girls Hostel Allied Facilities, Street Lights Installation, Construction of Panel & Sync Electric Room, Maintenance and Technician Workshop, Boundary Wall on New Land	544.40
2023-24	Construction of two new floors on Admin block, classrooms steps, construction of roads between hostels	1372.30
2024-25	Incubation Center plus new Data Science and AI block on students' facilitation center, Hostel Revocation, Boundary Wall on New Land	107.0
Total		<u>351.02 Million</u>

COUNTRIES VISITED

Country	From	To	Nature	Purpose
Malaysia	26-Oct-2024	29-Oct-2024	Official	UTeM & City University
Australia	15-Oct-2024	26-Oct-2024	Official	ISPRS Symposium
Thailand	11-Oct-2024	14-Oct-2024	Personal	Tourism
Singapore	08-Oct-2024	11-Oct-2024	Personal	Tourism
Malaysia	05-Oct-2024	08-Oct-2024	Official	Collaboration with UiTM
China	21-June-2024	25-June-2024	Official	Congress on AI
China	15-Apr-2024	26-Apr-2024	Official	Workshop
China	01-Dec-2023	10-Dec-2023	Official	Conference
Saudi Arabia	23-05-2023	05-Jul-2023	Personal	Hajj
Saudi Arabia	10-Dec-2022	25-Dec-2022	Personal	Umrah
Cyprus	19-Mar-2019	24-Mar-2019	Official	Conference
Malaysia	13-Oct-2018	25-Oct-2018	Official	Conference
China	06-May-2018	11-May-2018	Official	Conference
UAE	03-May-2011	06-May-2018	Personal	Tourism
India	04-Dec-2014	12-Dec-2014	Official	Conference
Indonesia	24-Oct-2013	01-Nov-2013	Official	Trainer
USA	24-Aug-2013	10-Sep-2013	Official	Conference
Thailand	13-Aug-2013	23-Aug-2013	Personal	Tourism
Sri Lanka	06-Nov-2012	10-Nov-2012	Official	Conference
Japan	31-Jul-2011	13-Aug-2011	Official	Cultural Activities
Australia	10-Apr-2011	23-Apr-2011	Official	Conference
Jordan	31-Mar-2011	08-Apr-2011	Official	Workshop
Japan	01-Aug-2010	18-Mar-2011	Official	Visiting Researcher
Malaysia	25-Jul-2010	29-Jul-2010	Official	Conference
Thailand	23-Jan-2008	22-Dec-2012	Official	Doctoral Degree

BIBLOGRAPY

Dr. Muhammad Shahzad Sarfraz is a prominent figure in the fields of Computer Science and Geospatial Technologies. He spearheads key thematic areas including ICT tools for Health, Agriculture, Disaster Management, and Location-based Systems, with a keen focus on their applications for the Environment. Dr. Shahzad specializes in utilizing web-based and machine learning open-source tools for Remote Sensing & Geographical Information Systems.

His academic contributions are substantial, encompassing more than 50 journal and conference papers. Additionally, he has developed tools tailored to organizational needs, conducted readiness assessments, and evaluated eHealth initiatives. Dr. Shahzad boasts extensive experience in planning, initiating, and overseeing the Computer Science Department and Evening Programs at the University of Gujrat. Moreover, he has demonstrated adeptness in catalyzing and coordinating research activities within the department.

Currently serving as a Professor in the Computer Sciences department and Director at the Chiniot-Faisalabad campus of the university, Dr. Shahzad Sarfraz has held distinguished positions in various institutions. Before joining the FAST-National University of Computer and Emerging Sciences, he served as an Associate Professor, Chairperson of the Computer Science Department, and Director of Evening Programs at the University of Gujrat and COMSATS Institute of Information Technology. His academic journey includes roles as an Assistant Professor at NUCES and a Ph.D. scholar at the Asian Institute of Technology (AIT), Thailand.

Dr. Shahzad's global exposure extends to his tenure as a visiting researcher in the Digital Image Processing lab at the National Institute of Informatics (NII), Tokyo, Japan. He has actively participated in seminars and workshops, both nationally and internationally, fostering collaborative research across the globe. A member of esteemed international societies such as IEEE, ACM, ISPRS, Canadian Remote Sensing, International Association of Chinese Professionals in GIS, and more, Dr. Shahzad also serves as a resource person for the World Health Organization (WHO) and Pak One Health Alliance, Pakistan, facilitating capacity-building workshops on analytical skills and information utilization.