

Dr. Sadaf Qasim

Associate Professor

Department of Civil Engineering

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EDUCATION

1. Doctor of Philosophy, Geotechnical Engineering (2013)
Universiti Teknologi PETRONAS, Perak, Malaysia
"Causal Factors Quantification and Treatment of Malaysian Landslides"
2. Master of Science, Geotechnical Engineering (2006)
NED University of Engineering and Technology, Karachi, Pakistan
"Issues of Slope Failures in Northern Area of Pakistan"
3. Master of Science, Environmental Sciences (1999)
University of Karachi, Pakistan
"A Probe Into Eyewitness Testimony of the Catastrophic Events of Pakistan"
4. Bachelor of Civil Engineering (1992)
NED University of Engineering and Technology Karachi Pakistan
"Analysis and Design of an Industrial Building Port Qasim with Steel Roof Trusses"

PROFESSIONAL APPOINTMENTS

- Associate Professor (2018- till date)
NED University of Engineering and Technology Karachi, Pakistan
- Certified Teachers Trainer (2019-till date)
Harvard University (Adapted by NED University Karachi Pakistan)
- Assistant Professor (2006-to 2018)
NED University of Engineering and Technology Karachi, Pakistan
- Lecturer (2003-2006)
Sir Syed University of Engineering and Technology Karachi, Pakistan
- Visiting Lecturer (1999-2001)
Dawood Engineering College Karachi-Pakistan
- Visiting Lecturer (2000-2002)
University of Karachi-Pakistan

TECHNICAL CAPABILITIES

My research expertise primarily lies in slope stability analysis and experimental soil mechanics. My research on slope stability analysis is based on applying probabilistic and deterministic techniques to quantify the role of human errors during the construction of slopes. The research investigates the causes of slope failures, predicts the failure based on probabilistic models, and suggests remedial measures to minimize the chances of slope failure. The experimental part of my research is based on evaluating the behaviour of soft clays and treating them with economical additives to provide sustainable ground improvement solutions. My major research expertise is given below.

- Slope stability
- Human reliability analysis
- Risk assessment
- Quantification of human errors
- Probabilistic and deterministic analysis of slopes
- Slope strengthening works
- Experimental soil mechanics
- Ground improvement methods
- Soil stabilization

ENGINEERING SOFTWARES

- **PLAXIS** Finite Element Code for Soil and Rocks
- **FREW** (Oasys Ltd)–Flexible Retaining Walls program analysis
- **RATZ** (Randolph, 2003)–Load Transfer analysis of axially loaded piles
- **GeoStudio** (GEO-SLOPE Int. Ltd)–Geotechnical Engineering Software, e.g. SLOPE/W, SEEP/W, SIGMA/W, QUAKE/W
- **ICFEP** – Imperial College Finite Element Program
- **Expert Choice**- Analytic Hierarchy Process

OTHER COMPUTER SOFTWARE

- **MATLAB**- The Language of Technical Computing
- **AutoCAD** (Autodesk)
- **Microsoft Office**- Includes Word, Excel, Visio, PowerPoint
- **STAAD. Pro** -Structure Analysis and Design Software

PROFESSIONAL AWARDS

- Recipient of Silver Medal award on the poster entitled *Survey results for resistance factors determination of common geotechnical structures of Malaysia* at the 24th edition of UTP engineering design exhibition (EDX 24), Oct 21-22, 2009.
- Received Best Presenter award for presenting on the topic *Survey results for resistance factors determination of common geotechnical structures of Malaysia* at the 24th edition of UTP engineering design exhibition (EDX 24), Oct 21-22, 2009.

TEACHING RESPONSIBILITIES AND STUDENT AFFAIRS

Presently, I am responsible for the curriculum development of an elective subject for the final year undergraduate students, including focusing on student learning outcomes, research outputs and examinations. Besides teaching undergraduate classes, I am also the principal course teacher of the Master's program in Geotechnical Engineering and assist the postgraduate students in advancing their research work. In addition, I am active in supporting departmental activities and working as a committee member of the Geo-Vision group.

➤ POSTGRADUATE PROGRAM COURSES

- Earth Structures (Civil Engineering)
- Earth Retaining Structures (Civil Engineering)

➤ UNDERGRADUATE PROGRAM COURSES

- Strength of Materials II (Civil Engineering and Urban Engineering)
- Quantity Surveying and Costing (Civil Engineering)
- Soil Mechanics (Civil Engineering)
- Irrigation Engineering (Civil Engineering)
- Fluid Mechanics (Civil Engineering)
- Plain and Reinforced Concrete Design (Civil Engineering)
- Structural Design and Drawing (Architecture and Planning)
- Advanced Technology (Urban Engineering)
- Soil Mechanics (Urban Engineering)
- Geology for Engineers (Civil Engineering)

UNIVERSITY APPOINTMENTS (EXAMINERS)

- Strength of Materials II (Civil Engineering & Urban Engineering)
- Quantity Surveying and Costing (Civil Engineering)
- Soil Mechanics (Civil Engineering)
- Irrigation Engineering (Civil Engineering)
- Plain and Reinforced Concrete Design (Civil Engineering)
- Structural Design and Drawing (Architecture and Planning)
- Advanced Technology (Urban Engineering)
- Soil Mechanics (Urban Engineering)
- Geology for Engineers (Civil Engineering)

RESEARCH SUPERVISION

I have been supervising the research projects of final year undergraduate students in the capacity of both principal supervisor and co-supervisor. Presently, my research projects focus on slope stability analysis and experimental soil mechanics. The research on slope stability comprises modelling the slopes by applying probabilistic and deterministic approaches, and it also includes developing human reliability analysis models to quantify human errors. The studies on experimental soil mechanics include evaluating the behaviour of soft clays and improving their geotechnical properties by using economical additives to strengthen the indigenous soil feasibly. Currently, I am also working on the project of Tsunami hazard assessment with my faculty.

RESEARCH PROJECTS

- Analysis and Design of an Industrial Building with Different Roof Slab System (2003)
- Analysis and Design of a high rise building by using Etabs and Sap 2000 (2004)
- Reliability Analysis of Shallow Foundations (2015)
- Issues of Slope Failures in Pakistan (2015)
- Slope Stability Analysis by using Geo Slope Software (2015)
- Deterministic and Non Deterministic Analysis of Slopes of District Battagram (2015)
- Design of Deep Foundations by using LRFD approach (2015)
- Probabilistic Analysis of an Isolated Footings (2015)
- Stabilization of Slopes by using Micropiles (2015)
- Advantages of Subgrade Stabilization by using Geosynthetics (2015)

PROFESSIONAL AFFILIATIONS

1. American Society of Civil Engineers (ASCE)
2. American Concrete Institute (ACI) American Society of Testing Materials (ASTM)
3. Institute of Civil Engineers (ICE), UK
4. Pakistan Engineering Council (PEC)

INDUSTRIAL EXPERIENCE

1. Structural Consultant (1995-2002)
Tasawar Abidi and Associates Karachi Pakistan
2. Design Engineer (1993-1995)
Top Engineering Karachi Pakistan
3. Trainee Engineer (1992-1993)
Zaheeruddin Consultants Karachi Pakistan

REFERENCES

1. Dr. Samir B. Belhaouari
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2. Dr. Raza ul Mustafa
Senior Lecturer
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1. Dr.Danish Kazmi
Adjunct Lecturer in Geotechnical Engineering
School of Civil Engineering
The University of Queensland, Australia
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PUBLICATIONS

1. Kazmi, D., Serati, M., Williams, D. J., Olaya, S. Q., Qasim, S., Cheng, Y. P., Grizi, A., & Javadi, A. A. (2024). Correction: Shear strength and consolidation behaviour of kaolin clay reinforced with a granular column backfilled with crushed waste glass. *Geotechnical and Geological Engineering*, 42, 3633–3634.
2. Moin. S. Qasim. S & Marri. A EFFECT OF INPUT PARAMETERS ON DYNAMIC CHARACTERISTICS OF CLAYEY SOIL THROUGH DYNATOR–A NON-DESTRUCTIVE TEST Jilin Daxue Xuebao (Gongxueban)/Journal of Jilin University (Engineering and Technology Edition) ISSN: 1671-5497 E-Publication: Online Open Access Vol: 42 Issue: 11-2023
3. Sadia Moin, Sadaf Qasim, Effect on dynamic parameters of waste reinforced soil under vibrations generated through traffic loading: Experimental evaluation, *Journal of Engineering Research*, 2023
4. Ali, Sharafat, Feng Yong, **Sadaf Qasim**, Mudassir Mehmood, and Farhad Jamil. "Experimental Investigation of Shear Strength Characteristics of Light-Weighted Backfill Soil." *Journal of Xi'an Shiyou University, Natural Science Edition*, volume 19 issue 08, 01-13
5. **Qasim, Sadaf** & Bano, Halima & Moin, Sadia & Ali, Sharafat & Haq, Ejaz & Farhan, Hafiz & Maaz, Muhammad & Hamza, Muhammad & Khan, Furqan & Sikander, Faryal. (2023). Probabilistic Analysis of the Slope of Nai Gaj Dam During Rainfall Infiltration. *Xi'an Shiyou Daxue Xuebao (Ziran Kexue Ban)/Journal of Xi'an Shiyou University*. Volume 19. 877-900.
6. **Qasim, Sadaf** & Moin, Sadia & Bano, Halima & Ullah, Fahim & Memon, Reena & Khan, Furqan & Sikander, Faryal. (2023). Students' Concern Towards Landslide Issues in Northern Hilly Areas of Pakistan. *Xi'an Shiyou Daxue Xuebao (Ziran Kexue Ban)/Journal of Xi'an Shiyou University*. Volume: 19. 1458-1465.
7. **Qasim, Sadaf** & Bano, Halima & Masood, Arjumend & Ali, Sharafat & Akram, Ayesha & Khan, Furqan & Memon, Reena & Sikander, Faryal. (2023). Comparative soil shear strength analysis with and without native vegetation. *Xi'an Shiyou Daxue Xuebao (Ziran Kexue Ban)/Journal of Xi'an Shiyou University*. 19. 431-456.
8. Kazmi, D., Serati, M., Williams, D. J., Olaya, S. Q., **Qasim, S.**, Cheng, Y. P., and Carraro, J. A. H. (2022). Kaolin clay reinforced with a granular column containing crushed waste glass or traditional construction sands. *International Journal of Geomechanics*, 22(4), 04022030.
URL: <https://ascelibrary.org/doi/full/10.1061/%28ASCE%29GM.1943-5622.0002322>
9. Kazmi, D., Serati, M., Williams, D. J., **Qasim, S.**, and Cheng, Y. P. (2021). The potential use of crushed waste glass as a sustainable alternative to natural and manufactured sand in geotechnical applications. *Journal of Cleaner Production*, 284, 124762.
URL: <https://www.sciencedirect.com/science/article/pii/S095965262034806X>
10. Kazmi, D., Serati, M., Williams, D.J., **Qasim, S.**, Cheng, Y., & Olaya, SQ. (2020). A Comparative Study on Shear Strength of Crushed Waste Glass with Natural and Manufactured Sand. *54th US Rock Mechanics/Geomechanics Symposium*, USA. (ARMA-2020-1480)
URL: <https://onepetro.org/ARMAUSRMS/proceedings-abstract/ARMA20/All-ARMA20/ARMA-2020-1480/447708>

11. Kazmi, D., **Qasim, S.**, Harahap, I., Imran, M. & Sandhu, A. (2018). Probabilistic Assessment of Bored Pile Wall: A Slope Stabilisation Technique. *MATEC Web Conf.* Volume 203, International Conference on Civil, Offshore & Environmental Engineering 2018 (ICCOEE 2018)
URL: <https://doi.org/10.1051/mateconf/201820304006>
12. Kazmi, D., **Qasim, S.**, Harahap, I., & Baharom, S. (2017). A Probabilistic Study for the Analysis of the Risks of Slope Failure by Applying HEART Technique. *Geotechnical and Geological Engineering*, 1-13. Springer.
URL: <https://link.springer.com/article/10.1007/s10706-017-0297-6>
13. Kazmi, D., **Qasim, S.**, Harahap, I., & Baharom, S. (2017). Landslide of Highland Towers 1993: a case study of Malaysia. *Innovative Infrastructure Solutions*, 2(21), 1-9. Springer.
URL: <https://link.springer.com/article/10.1007/s41062-017-0069-4>
14. Kazmi, D., **Qasim, S.**, Harahap, I. S. H., Baharom, S., Masood, A., & Imran, M. (2017). A study on landslide risk management by applying fault tree Logics. *MATEC Web of Conferences*, 95, 17009.
URL: http://www.matec-conferences.org/articles/mateconf/abs/2017/09/mateconf_icmme2017_17009/mateconf_icmme2017_17009.html
15. Kazmi, D., **Qasim, S.**, Harahap, I., Baharom, S., Mehmood, M., Siddiqui, F. I., & Imran, M. (2017). Slope Remediation Techniques and Overview of Landslide Risk Management. *Civil Engineering Journal*, 3(3), 180-189.
URL: www.civilejournal.org/index.php/cej/article/view/301
16. Kazmi, D., **Qasim, S.**, Harahap, I. S. H., Baharom, S., Imran, M., & Moin, S. (2017). A Study on the Contributing Factors of Major Landslides in Malaysia. *Civil Engineering Journal*, 2(12), 669–678.
URL: <http://civilejournal.org/index.php/cej/article/view/213>

17. **Qasim, S.**, Harahap, I.S.H., Baharom, S., Imran, M. and Kazmi, D. (2016) Investigating the potential of soil-nail retaining structures as a slope strengthening remedy by capitalizing on reliability analysis technique, in *Engineering Challenges for Sustainable Future*. Taylor & Francis Group, pp. 27–31.
URL: <http://www.crcnetbase.com/doi/pdfplus/10.1201/b21942-6>
18. **Qasim, S.**, Harahap, I., Baharom, S., Kazmi, D., & Khan, S. (2016). An Assessment of Predominant Errors Posing Vulnerability to Malaysian Landslides. *International Journal of Structural and Civil Engineering Research*, 5(4), 296–299.
URL: <http://www.ijscer.com/uploadfile/2016/0726/20160726073319247.pdf>
19. Kazmi, D., **Qasim, S.**, Siddiqui, F. I., & Azhar, S. B. (2016). Exploring the Relationship between Moisture Content and Electrical Resistivity for Sandy and Silty Soils *International Journal of Engineering Science Invention*, 5(7), 42–47.
URL: [http://www.ijesi.org/papers/Vol\(5\)7/F0507042047.pdf](http://www.ijesi.org/papers/Vol(5)7/F0507042047.pdf)
20. Kazmi, D., **Qasim, S.**, Harahap, I. S. H., Baharom, S., & Imran, M. (2016). A Study on Slope Strengthening Works by LRFD based Reliability Analysis Approach. *International Journal of Engineering Research & Technology*, 5(9), 394–399.
URL: <https://www.ijert.org/view-pdf/15811/a-study-on-slope-strengthening-works-by-lrfd-based-reliability-analysis-approach>
21. Kazmi, D., **Qasim, S.**, Harahap, I., & Azhar, S. B. (2016). An extensive study on the quantification of human errors that hampers the performance and construction of structure particularly in geotechnical ambit. *IOSR Journal of Mechanical and Civil Engineering*, 13(4), 33–43. Journal ISSN: 2320–334X
URL: www.iosrjournals.org/iosr-jmce/papers/vol13-issue4/Version-5/E1304053343.pdf
22. **Qasim, S.**, Harahap, I., & Baharom, S. (2016). Managing landslide risks by human error assessment reduction technique. Paper presented at *International Conference on Sustainable Civil Engineering*, June 20–21, 2016 Cape Town, South Africa
URL: <https://www.omicsonline.org/proceedings/managing-landslides-risks-by-human-error-assessment-reduction-technique-45704.html>
23. Kazmi, Z., **Qasim, S.**, & Kazmi, D. (2016). An Assessment of Risk Management Practices in the Logistics and Construction Industry. *IOSR Journal of Mechanical and Civil Engineering*, 13(4), 34–38. Journal ISSN: 2320–334X
URL: <http://iosrjournals.org/iosr-jmce/papers/vol13-issue4/Version-3/F1304033438.pdf>
24. **Qasim, S.**, Harahap, I., Baharom, S., & Imran, M. (2014). Human Error Causes in Slope Engineering Practices. *Applied Mechanics & Materials*, 567, 730–735.
Journal ISSN: 1662-7482
URL: <https://www.scientific.net/AMM.567.730>
25. **Qasim, S.**, Harahap, I. S. H., & Osman, S. B. S. (2013). Causal factors of Malaysian landslides: A Narrative study. *Research Journal of Applied Sciences, Engineering and Technology*, 5(7), 2303–2308. Journal ISSN: 2040-7459
URL: <http://www.maxwellsci.com/print/rjaset/v5-2303-2308.pdf>

26. Talpur, M., Napiah, M., Chandio, I. A., Qureshi, T. A., & **Qasim, S.** (2013). Evaluation of Public Sector Health Facilities within the Context of Deprived Regions of Developing World. *European Journal of Scientific Research*, 106(1), 34–45. Journal ISSN:1450-216X
URL: http://www.europeanjournalofscientificresearch.com/issues/EJSR_106_1.html
27. **Qasim, S.**, & Harahap, I. (2012). Probabilistic analysis of Malaysian bored piles. *International Journal of Civil and Structural Engineering*, 3(2), 380–395. Journal ISSN: 0976-4399
URL: www.ipublishing.co.in/ijcserarticles/twelve/articles/volthree/EIJCSE3136.pdf
28. **Qasim, S.**, & Harahap, I. (2012). Geotechnical Uncertainties and Reliability Theory Applications. *International Journal of Engineering Research & Technology*, 1(6), 1-8. Journal ISSN: 2278-0181
URL: <http://www.ijert.org/view-pdf/1216/geotechnical-uncertainties-and-reliability-theory-applications>
29. **Qasim, S.**, & Harahap, I. S. H. (2011). Human error related risks of Malaysian landslides. Paper presented at *The International Conference on Geotechnical and Highway Engineering*, 17-20 May 2011, Central Java – Indonesia.
URL: http://www.worldscientific.com/doi/pdf/10.1142/9789814365161_0069
30. **Qasim, S.**, & Harahap, I. S. H. (2012) Causal Factor Quantification of Malaysian Landslides. Paper presented at *International Conference on Civil, Offshore and Environmental Engineering (ICCOEE 2012)*, Kuala Lumpur, Malaysia.
31. **Qasim, S.**, Harahap, I. S. H., Osman, S., & Izaddin, S. (2010). Reliability analysis of engineered landslide mitigation techniques. Paper presented at *International Conference on Sustainable Building and Infrastructure (ICSB2010)*, Kuala Lumpur, Malaysia.
URL: <http://malrep.uum.edu.my/rep/Record/utp.eprints-7979>
32. **Qasim, S.**, & Harahap, I. S. H. (2010). Reliability analysis and resistance factor determination of bored piles of Malaysian region. Paper presented at *first Makassar International Conference on Civil Engineering (MICCE 2010)*, 8-9 Mar 2010, Indonesia.
URL: <http://malrep.uum.edu.my/rep/Record/utp.eprints-1472>
33. Kazmi, D., **Qasim, S.**, Harahap, I., & Baharom, S (Accepted). Evaluation of the causes of Bukit Antarabangsa 2008 landslide by using fault tree analysis. *MATEC Web of Conferences*.