



Dr. Vaibhav Mittal

BES DIVISION, CSIR - CRRI, NEW DELHI

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EDUCATION

2019 - 2024

Academy of Scientific and Innovative Research (AcSIR)/CSIR - CBRI, Roorkee

- Ph.D. in Engineering
- CGPA: 10/10

2017 - 2019

Madan Mohan Malaviya University of Technology (MMUT)

- Master of Technology
- Structural Engineering
- CGPA: 9.69 / 10.0

2011 - 2015

Dr. APJ Abdul Kalam Technical University (AKTU)/BIT Muzaffarnagar

- Bachelor of Technology
- Civil Engineering
- Percentage: 81.70%

AREA OF INTEREST

- Seismic Soil-Structure Interaction
- Bridge Engineering
- Shake Table Testing
- Finite Element Analysis and Constitutive Modeling
- Structural Analysis
- Structural Dynamics
- Earthquake Geotechnical Engineering
- Geotechnical and Foundation Engineering
- Repair, Rehabilitation and Strengthening Measures of Structures and Foundations

WORK EXPERIENCE

- **CSIR - CRRI, New Delhi** November 2025
Scientist
 - Bridge Engineering and Structures (BES) Division
- **ZuruTech India Pvt. Ltd.** July 2025 - October 2025
SRE: Structural R&D Engineer
 - Soil-Structure Interaction for AAC Structures
- **CSIR - CBRI, Roorkee** August 2019 - December 2024
DST INSPIRE Fellow
 - Shake Table Testing of Scaled - Down Models subjected to Scaled-Down Input Ground Motions
 - Cyclic Triaxial Testing for Estimation of Dynamic Properties of Cohesion-less and Cohesive Soil
 - Use of Different Sensors/Transducers for Measurement of Soil, Foundation and Structural Responses
 - Finite Element Investigation for Projects Related to National Importance/Heritage Structures
 - **Software Expertise:** ABAQUS, PLAXIS 3D, DEEPSOIL, AUTOCAD, ETABS, REVIT, Staad.Pro

AWARDS AND RECOGNITIONS

- DST INSPIRE Fellow
- SERB International Travel Grant for International Conference
- Best Paper Award for presenting my work at 8ICRAGEE 2024 held at IIT Guwahati from 11 - 14 December 2024
- Director's Best Research Publication Award 2023 for the paper "Subsurface Exploration and Investigation of Foundation Performance for Distress Assessment of a Building" by CSIR - CBRI
- Director's Best Research Publication Award 2024 for the paper "Experimental Study on Performance of Soil-Pile-Raft-Structural System and Estimation of Piled-Raft Coefficient under Seismic Excitations" by CSIR - CBRI
- Among Top 5 in Best Research Award Category (Ph.D.) by DFI, India
- Graduate Aptitude Test in Engineering (GATE)
- Gold Medalist for being University topper during M.Tech
- All India National Talent Search Examination (NTSE)

PUBLICATIONS

A. SCI/SCIE PUBLICATIONS

- **Mittal, V.,** Samanta, M., and Kanungo, D. P. (2025). Influence of isolated footing embedment on the seismic performance of building considering the soil-foundation-structure interaction: An experimental approach. *Journal of Rock Mechanics and Geotechnical Engineering (Elsevier)*, 17(2), 1194-1212. DOI: <https://doi.org/10.1016/j.jrmge.2024.04.019>. [IF - 10.20, Q1]
- **Mittal, V.,** and Samanta, M. (2024). Experimental Study on Performance of Soil-Pile-Raft-Structural-System and Estimation of Piled-Raft Coefficient under Seismic Excitations. *Engineering Structures (Elsevier)*, 325, 119440. DOI: <https://doi.org/10.1016/j.engstruct.2024.119440>. [IF 6.40, Q1]
- **Mittal, V.,** and Samanta, M. (2024). Influence of Spacing and Slenderness Ratio of End-Socketed Pile Foundation on Seismic Response of Building considering Soil-Pile-Structure-Interaction: An Experimental Approach. *Journal of Structural Engineering (ASCE)*, 151(2), 04024213. DOI: <https://doi.org/10.1061/JSENDH.STENG-13724>. [IF 3.90, Q1]
- Mittal, V., Samanta, M., and Kanungo, D. P. (2025). Seismic Response of Low-to-Mid-Rise Buildings Supported on Isolated Footings Considering Soil-Foundation-Structure Interaction. *Earthquake Engineering and Engineering Vibrations (Springer)*. [Accepted, In Press]. [IF - 3.30, Q1]
- **Mittal, V.,** and Samanta, M. (2025). Performance of a Laminar Shear Box for Cohesionless Soil under Seismic Excitations. *Geotechnical and Geological Engineering (Springer)*, 43, 60; pp:1-44. DOI: <https://doi.org/10.1007/s10706-024-02973-4>. [IF 2.00, Q1]
- **Mittal, V.,** Samanta, M., and Maurya, M. C. (2025). Effect of Soil Constitutive Model and Slenderness Ratio of Piles on Seismic Performance of Moment-Resisting Frames supported on Pile Foundation Considering Soil-Pile-Structure-Interaction. *Journal of Structural Design and Construction Practice (ASCE)*, 30(2), 04025004. DOI: <https://doi.org/10.1061/JSDCCC.SCENG-1563>. [IF 2.10, Q2]
- **Mittal, V.,** Samanta, M., Dash, R. K., Falae, P. O., and Kanungo, D. P. (2023). Subsurface Explorations and Investigation of Foundation Performance for Distress Assessment of Building. *Journal of Performance of Constructed Facilities (ASCE)*, 37(2), 04023011. DOI: <https://doi.org/10.1061/JPCFEV.CFENG-4187>. [IF - 2.10, Q2]
- **Mittal, V.,** and Samanta, M. (2021). Causes of Failure and Strengthening Measures of a Pile Foundation supporting Transmission Line Tower. *Journal of Performance of Constructed Facilities (ASCE)*, 35(4), 04021034. DOI: [https://doi.org/10.1061/\(ASCE\)CF.1943-5509.0001592](https://doi.org/10.1061/(ASCE)CF.1943-5509.0001592). [IF - 2.10, Q2]
- **Mittal, V.,** and Samanta, M. Response of Building-Pile Foundation System Considering Seismic Soil-Pile-Structure Interaction. In *International Journal of Geomechanics (ASCE)*. [About to be Submitted]. [IF - 3.30, Q1]

B. INTERNATIONAL/NATIONAL CONFERENCES/BOOK CHAPTERS

- **Mittal, V.,** and Samanta, M. (2025). An Equivalent Pile Approach for Assessing the Seismic Performance of High-Rise Building Considering Soil-Pile-Structure Interaction. In: Lecture Notes in Civil Engineering, Vol. 567, B.K. Maheshwari et al. (Eds): Seismic Design and Performance of Structures, Soil-Structure Interaction. https://doi.org/10.1007/978-981-96-2096-8_25. (Presented the Paper at 8ICRAGEE, 2024, 11 - 14 December 2024, IIT Guwahati, Assam).
- **Mittal, V.,** and Samanta, M. (2025). Assessment of Influence of Spacing of Floating Pile Foundation on Seismic Performance of Buildings Considering Soil-Pile-Structure-Interaction. In: Savoikar, P., Basarkar, S.S., Shukla, J., Adimoolam, B. (eds) Deep Foundations for Infrastructure Development in India, Volume 2. DFI-India 2024. Lecture Notes in Civil Engineering, vol 644. Springer, Cham. https://doi.org/10.1007/978-3-031-90932-0_13. (Presented the Paper at DFI India Annual Conference, 2024, 19 - 21 September 2024, Panaji, Goa).
- **Mittal, V.,** Samanta, M., and Kanungo, D. P. (2024). Effect of Spacing of Piles in Piled-Raft Foundation on Seismic Response of Building Considering SSI. In Proceedings of 18th World Conference in Earthquake Engineering (WCEE), Italy. <https://proceedings-wcee.org/view.html?id=24433&conference=18WCEE>. (Presented the Paper at 18th World Conference on Earthquake Engineering, 18WCEE, 30 June - 5 July, 2024, Milan, Italy).
- **Mittal, V.,** and Samanta, M. (2024). Investigation on Influence of slenderness ratio of Pile Foundation on Seismic Response of Building Considering Soil-Structure Interaction. Japanese Geotechnical Society Special Publication, 2024, Volume 10, Issue 49, Pages 1853-1858, Released on J-STAGE June 17, 2024, Online ISSN 2188-8027. <http://dx.doi.org/10.3208/jgssp.v10.OS-38-07>. (Presented the Paper at 8th International Conference on Earthquake Geotechnical Engineering, 8ICEGE, 07 - 10 May, 2024, Osaka, Japan).

- **Mittal, V.,** Samanta, M., and Kanungo, D. P. (2024). Investigation on Influence of Pile Foundation on Seismic Response of Irregular Building Considering Soil-Structure Interaction. In: Jose, B.T., Sahoo, D.K., Shin, E.C., Choudhury, D., Joseph, A., Pai, R.R. (eds) Proceedings of the Indian Geotechnical Conference 2022 Volume 1. IGC 2022. Lecture Notes in Civil Engineering, vol 476. Springer, Singapore. https://doi.org/10.1007/978-981-97-1737-8_11. [\(Presented the Paper at Indian Geotechnical Conference \(IGC Kochi\), 15 - 17 December 2022, Kochi, India\).](#)
- **Mittal, V.,** and Samanta, M. (2024). Investigation on Influence of Embedment Depth of Foundation on Seismic Response of Building Considering Soil—Structure Interaction. In: Goel, M.D., Kumar, R., Gadve, S.S. (eds) Recent Developments in Structural Engineering, Volume 1. SEC 2023. Lecture Notes in Civil Engineering, vol 52. Springer, Singapore. https://doi.org/10.1007/978-981-99-9625-4_6. [\(Presented the Paper at 13th Structural Engineering Convention, SEC 2023, 07 - 09 December 2023, VNIT, Nagpur, India\).](#)
- **Mittal, V.,** and Samanta, M. (2023). Investigation on Influence of Embedment Depth of Shallow Foundation on Seismic Response of Building Considering Soil-Structure Interaction. Lecture Notes in Civil Engineering, Vol. 331, Manish Shrikhande et al. (Eds): Proceedings of 17th Symposium on Earthquake Engineering (Vol. 3). <https://doi.org/10.1007/978-981-99-1579-8>. [\(Presented the Paper at 17th Symposium on Earthquake Engineering, 17SEE, 14 - 17th November, 2022, IIT Roorkee, India\).](#)
- **Mittal, V.,** and Samanta, M. (2021). A Critical Review on Design Philosophies of Different Design Standards on Seismic Soil- Structure Interaction. In: Sitharam T., Palapati R.R., Kolathayar S. (eds) Seismic Design and Performance. Lecture Notes in Civil Engineering, vol 120. Springer, Singapore. https://doi.org/10.1007/978-981-33-4005-3_1. [\(Presented the Paper at 7th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, 7ICRAGEE, 12 - 15 July 2021, IISC Bengaluru, India\).](#)

MEMBERSHIPS AND RECOGNITIONS

- Life Member in Indian Society of Earthquake Technology
- Reviewer in
 - Journal of Performance of Constructed Facilities (ASCE),
 - Journal of Asian Architecture and Building Engineering (Taylor and Francis),
 - Cogent Engineering (Taylor and Francis),
 - Indian Geotechnical Journal (Springer),
 - Scientific Reports (Springer),
 - Iranian Journal of Science and Technology, Transactions of Civil Engineering (Springer),
 - Measurement (Elsevier),
 - Discover Civil Engineering (Springer),
 - Journal of Hazardous Material Advances (Elsevier).

INTERNATIONAL VISITS

- 8th International Conference on Earthquake Geotechnical Engineering, Osaka, Japan (8ICEGE, 2024)
- 18th World Conference on Earthquake Engineering, Milan, Italy (18WCEE, 2024)

INVITED LECTURES

- Delivered a Keynote Lecture on "**Assessment of Seismic Performance of Buildings supported on Pile Foundation Considering Soil-Pile-Structure Interaction**" on October 23, 2025 at "**3rd International Conference on Civil Engineering and Intelligent Construction (ICCEIC 2025)**".
- Expect Lecture on "**User Material Subroutine UMAT in ABAQUS: Application to Geotechnical/Structural Engineering Problems**" at "**PIGSO Learning**" on May 17, 2025.
- Expect Lecture on "**Computing in Geotechnical Engineering Lab: Plaxis Learning Session**" at Department of Civil Engineering in "**University Institute of Technology, Himachal Pradesh University, Summerhill - 171005**".
- Expert Lecture on "**Seismic-Soil-Foundation-Structure Interaction of Buildings: A Numerical Approach**" at "**PIGSO Learning**" on March 1, 2025.