

Muhammad RASHID, Ph.D

 Website |  Google Scholar |  ResearchGate |  Scopus ID |  ORCID
 muhammad.rashid.ft@u.tsukuba.ac.jp

 University of Tsukuba, Tsukuba, Ibaraki, 305-8573, Japan

EXPERIENCE

- | | | |
|--|--|--|
| • Postdoctoral Research Associate [] | <i>Advanced Infrastructure System (AIS) Lab, University of Tsukuba</i> | <i>October 2025 - Present</i>
Tsukuba, Japan |
| • Research Assistant [] | <i>Advanced Infrastructure System (AIS) Lab, University of Tsukuba</i> | <i>November 2023 - September 2025</i>
Tsukuba, Japan |
| • Research Assistant [] | <i>Earthquake Engineering Center, UET Peshawar</i> | <i>April 2019 - September 2020</i>
Peshawar, Pakistan |
| • Visiting Lecturer [] | <i>Department of Civil Engineering, UET Peshawar</i> | <i>January 2020 - June 2020</i>
Peshawar, Pakistan |
| • Teaching Assistant [] | <i>Department of Engineering Mechanics and Energy, University of Tsukuba</i> | <i>October 2023 - September 2025</i>
Tsukuba, Japan |
| • Teaching Assistant [] | <i>Department of Civil Engineering, UET Peshawar</i> | <i>October 2018 - June 2020</i>
Peshawar, Pakistan |
| • Junior Design Engineer | <i>Structural Engineers Solution (SES) Consultant</i> | <i>March 2018 - August 2018</i>
Peshawar, Pakistan |

EDUCATION

- | | | |
|---|--------------------------------|---|
| • University of Tsukuba | <i>Ph. D in Engineering</i> | <i>October 2022 - September 2025</i>
Tsukuba, Japan |
| ◦ Degree Program in Engineering Mechanics and Energy | | |
| • University of Tsukuba | <i>Masters in Engineering</i> | <i>October 2020 - September 2022</i>
Tsukuba, Japan |
| ◦ Degree Program in Engineering Mechanics and Energy | | |
| • University of Engineering and Technology, Peshawar | <i>Bachelor in Engineering</i> | <i>August 2014 - September 2018</i>
Peshawar, Pakistan |
| ◦ Department of Civil Engineering | | |

JOURNAL PUBLICATIONS

- [10] Rashid, M., Nishio, M. (2025). **Energy-based fragility assessment of reinforced concrete bridges considering cumulative seismic demand under mainshock-aftershock sequences.** *Bulletin of Earthquake Engineering*, DOI: 10.1007/s10518-025-02300-z
- [9] Rashid, M., Nishio, M. (2025). **An optimal intensity measure-based seismic fragility surfaces for curved bridges considering their sensitivity to seismic excitation direction.** *Earthquake Engineering and Engineering Vibration*, Vol. 24 (2), 509-526, DOI: 10.1007/s11803-025-2310-z
- [8] Rashid, M., Nishio, M. (2024). **Mainshock-aftershock seismic fragility assessment of Civil structures: A state-of-the-art review.** *Earthquake Engineering and Resilience*, Vol. 3 (4), 548-573, DOI: 10.1002/eer2.105
- [7] Saida, T., Rashid, M., Nishio, M. (2024). **System fragility analysis of highway bridge using multi-output Gaussian process regression surrogate model.** *Advances in Structural Engineering*, Vol. 27 (16), 2803-2822, DOI: 10.1177/13694332241291255
- [6] Rashid, M., Nishio, M. (2023). **System fragility evaluation of a curved highway bridge structure considering multi-direction seismic excitations.** *Advances in Structural Engineering*, Vol. 26 (14), 2672-2692, DOI: 10.1177/13694332231198136
- [5] Saida, T., Rashid, M., Nemoto, Y., Tsukamoto, S., Asai, T. Nishio, M. (2023). **CNN-based segmentation frameworks for structural component and earthquake damage determinations using UAV images.** *Earthquake Engineering and Engineering Vibration*, Vol. 22, 359-369, DOI: 10.1007/s11803-023-2174-z

- [4] Khan, F. A., Khan, S. W., Shahzada, K., Ahmad, N., Rizwan, M., Fahim, M., Rashid, M. (2022). **Shake-table tests on moment-resisting frames by introducing engineered cementitious composite in plastic hinge length.** *Earthquakes and Structures*, Vol. 23 (1), 23-34, DOI: 10.12989/eas.2022.23.1.000
- [3] Khan, F. A., Rashid, M., Khan, S. W., Rizwan, M., Badrashi, Y. I., Fahim, M., Tanoli, M. A., Khaliq, W., Gul, A. (2021). **Comparative seismic performance assessment of RC and RC/ECC hybrid frame structures: a shake table study.** *Innovative Infrastructure Solutions*, Vol. 7 (1), 94, DOI: 10.1007/s41062-021-00692-w
- [2] Khan, F., Khan, S., Rashid, M., Rizwan, M., Fahim, M., Shahzada, K. (2021). **Evaluation of code-compliant / non-compliant ECC-RC IMRF structures.** *Structures*, Vol. 32, 1634-1645, DOI: 10.1016/j.istruc.2021.03.070
- [1] Ghani, A., Ali, Z., Khan, F. A., Shah, S. R., Khan, S. W., Rashid, M. (2020). **Experimental study on the behavior of waste marble powder as partial replacement of sand in concrete.** *SN Applied Sciences*, Vol. 2 (9) 1554, DOI: 10.1007/s42452-020-03349-y

CONFERENCE PAPERS

- [10] Rashid, M., Nishio, M. (2025). **Seismic energy dissipation and system fragility analysis of continuous reinforced concrete highway bridges.** In *14th International Conference on Structural Safety and Reliability - ICOS-SAR'25*, University of Southern California, Los Angeles, USA. DOI: 10.23967/icossar.2025.042
- [9] Rashid, M., Nishio, M. (2025). **Seismic Energy Distribution in Multi-span Reinforced Concrete Bridges.** In *IABSE Symposium, Tokyo: Environmentally Friendly Technologies and Structures: Focusing on Sustainable Approaches*, pp. 1485-1493. DOI: 10.2749/tokyo.2025.1485
- [8] Rashid, M., Nishio, M. (2025). **Seismic energy distribution and fragility assessment of reinforced concrete multi-span highway bridges.** *The 2nd International symposium on Urban Lifeline, ISUL 2025*, Saitama, Japan.
- [7] Rashid, M., Nishio, M. (2023). **System Fragility Analysis of a Horizontally Curved Multi-span Highway Bridge Structure.** In *Experimental Vibration Analysis for Civil Engineering Structures. Lecture Notes in Civil Engineering*, pp. 500-510. DOI: 10.1007/978-3-031-39117-0_51
- [6] Saida, T., Rashid, M., Nishio, M. (2023). **Gaussian Process Regression Surrogate Model for Seismic Vulnerability Assessment of Highway Bridge Structure System.** In *Experimental Vibration Analysis for Civil Engineering Structures. Lecture Notes in Civil Engineering*, pp. 520-529. DOI: 10.1007/978-3-031-39117-0_53
- [5] Rashid, M., Nishio, M. (2023). **Seismic Fragility Analyses of a Curved Bridge System Considering an Optimal Intensity Measure.** *JSCE-25th International Summer Symposium*, Hiroshima: Japan Society of Civil Engineers.
- [4] Rashid, M., Nishio, M. (2023). **Dynamic Response Evaluation of an Existing Bridge Structure Based on Finite Element Modeling.** In *Experimental Vibration Analysis for Civil Engineering Structures. Lecture Notes in Civil Engineering*, pp. 413-427. DOI: 10.1007/978-3-030-93236-7_35
- [3] Rashid, M., Nishio, M. (2022). **Seismic Vulnerability Assessment of Complex Highway Bridge Structure using System Fragility Curves.** *JSCE-24th International Summer Symposium*, Kyoto: Japan Society of Civil Engineers.
- [2] Rashid, M., Nishio, M. (2022). **System Fragility Analysis of a Geometrically Complex Bridge for Seismic Risk Evaluation of Existing Highway Bridge Network.** *The 8th World Conference on Structural Control & Monitoring (8WCSCM)*, Florida, USA.
- [1] Rashid, M., Nishio, M. (2021). **Finite Element Analysis of an Existing Seismically Isolated Bridge Structure.** *JSCE-The 23rd International Summer Symposium*, Tokyo: Japan Society of Civil Engineers.

HONORS AND AWARDS

- **Awardee of MEXT Scholarship (University Special Program) for Ph.D** September, 2022
Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
- **Honorable mention** July, 2022
International Competition on Structural Health Monitoring (IC-SHM_2021)
- **Awardee of MEXT Scholarship (University Special Program) for Masters** September, 2020
Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan
- **Gold Medal and Distinction Certificate** August, 2014
Board of Intermediate & Secondary Education (BISE) Malakand
- **Best Student Award** March, 2011
Government High School Adam Dheri, Chakdara

SUMMER SCHOOL

- **APESS, Kyoto University, Japan** July, 2024
13th Asia-Pacific-Euro Summer School on Smart Structures Technology

PROFESSIONAL MEMBERSHIPS

- Japan Society of Civil Engineers (JSCE): Student member
- Pakistan Engineering Council (PEC): Registered Engineer

October, 2020 - Present

August, 2018 - Present

ADDITIONAL INFORMATION

Languages: English (Business level), Pashto & Urdu (Native), Japanese (N4)

Interests: Exploring Nature and Hiking

REFERENCES

Will be provided on demand