Curriculum Vita

RAVI SANKAR JAKKA

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AREAS OF INTEREST

- Geotechnical Earthquake Engineering: Foundation Design, Slope Stability, Landslides, Dynamic Site Characterization & Soil Liquefaction;
- Seismic Hazard Assessment, Local Site Effects, & Earthquake Early Warning;
- Ground Improvement Techniques, Geosynthetics & Reinforced Slopes;
- Machine Foundations & Earthquake Resistant Design of Foundations;

PROFESSIONAL BACKGROUND

Designation	Institute	Period of Experience
Asst. Professor	Earthquake Engineering Dept., Indian Institute of Technology, Roorkee (IIT R)	Since 2010
Post Doctoral Fellow	Indian Institute of Science, Bangalore (IISc)	8 months
Sr. Project Officer	IIT Madras	3 months
Post Doctoral Employee	***University of California**, Riverside, **USA***	**2 years**
Lecturer (Regular)	*National Institute of Technology, Jalandhar, Punjab (India)*	3 months

ACADEMIC PERFORMANCE

Year	**Exam/Degree**	**Institution**	**CGPA/ (%)**
2003-2007	Ph.D (Geotechnical Earthquake Engineering)	Indian Institute of Technology, Delhi	***9.5/10***
2001-2003	M.Tech (Soil Mechanics and Foundation Engg.)	Indian Institute of Technology, Delhi	***9.4/10***
1997-2001	B.E (Civil Environ. Engg.)	Andhra University, Visakhapatnam, AP	77%
1994-1996	Intermediate	S.K.K.S.C.V.S. Junior College, Chilakaluripet, A.P.	84%
1994	SSC	R.V.S.C.V.S. High School, Chilakaluripet, A.P.	80%

ACADEMIC ACHIEVEMENTS (AWARDS & PRIZES)

1. Received '***Young Geotechnical Engineer Best Paper Award***' on 18th December, 2014 from Indian Geotechnical Society.
2. Received ***National Doctoral Fellowship*** from AICTE, which is awarded to only top 50 students in various fields by the Government of India for pursuing better research (Duration of Fellowship: 2004 - 2007).
3. Awarded ***DAAD Fellowship*** by German Government for pursuing M. Tech project work in Germany (Duration of Fellowship: May, 2002 – February, 2003).
4. Received university gold medal for academic record (1997 - 2001).
5. Awarded ***Sir Arthur Cotton Memorial*** medal for adjudging as a best out going student in B.Tech, by Indian Concrete Institute, AP local center, Visakhapatnam (2001).
6. Received a ***Merit Certificate*** *and* ***Cash Prize*** in Intermediate for obtaining highest marks in the college (1997).

LIST OF PUBLICATIONS

International Journals:

1. Pandey, B., **Jakka, R.S.*,** and Kumar, A., (Accepted) , "Influence of Local Site Conditions on Strong Ground Motion Characteristics at Tarai region of Uttarakhand, India", ***Natural Hazards*** (Springer).
2. Nath, R.R., Hussain, Md., and **Jakka, R.S.**, (Accepted), "Effect of Bedrock Depth on Site Amplification: A Parametric Study for Different Soil Types", ***International Journal of Earthquake Engineering and Hazard Mitigation*** (IREHM).
3. **Jakka, R.S.***, Hussain, Md., and Sharma, M. L., (2015), "Effects on Amplification of Strong Ground Motion due to Deep Soils", International Journal of Geomechanics and Engineering, 8(5):663-674.
4. **Jakka, R.S.***, and Garg, S. (2015), "Suitable Triggering Algorithms for Detecting Strong Ground Motions using MEMS Accelerometers", Earthquake Engineering and Engineering Vibrations, 14(1):27-35.
5. **Jakka, R.S.**, Roy, N., and Wason, H.R. (2014), "Reply to comment on 'Implications of Surface Wave Data Measurement Uncertainty on Seismic Ground Response Analysis'", Soil Dynamics and Earthquake Engineering, pg. 1-4(In Press).

6. **Jakka, R.S.***, Roy, N., and Wason, H.R. (2014), “Implications of Surface Wave Data Measurement Uncertainty on Seismic Ground Response Analysis”, Soil Dynamics and Earthquake Engineering, 61-62:239-245.

7. Roy, N., **Jakka, R.S.***, and Wason, H.R. (2014), “Reply to comment on ‘Effect of surface wave inversion non-uniqueness on 1D seismic ground response analysis’’’, Natural Hazards Journal, 75(1):983-989 (DOI: 10.1007/s11069-014-1316-z).

8. **Jakka, R.S.***, Shuily, A., and Ranjit Das, (2013), “Liquefaction Potential for Kolkata City”, International Journal of Geotechnical Earthquake Engineering, 4(2):18-33.

9. Roy, N., **Jakka, R.S.**, and Wason, H.R. (2013), “Effect of Surface Wave Inversion Non-Uniqueness On 1-D Seismic Ground Response Analysis”, Natural Hazards Journal, 68(2):1141-1153. (DOI: 10.1007/s11069-013-0677-z).

10. Sitharam, T.G., Dash, H.K., and **Jakka, R.S.***, (2013), "Post liquefaction undrained shear behavior of sand silt mixtures at constant gross void ratio", ASCE-International Journal of Geomechanics, 13(4), 421-429. (DOI: 10.1061/(ASCE)GM.1943-5622.0000225).

11. **Jakka, R. S.** (2011), “Seismic slope stability of ash embankments: site specific studies for Delhi region”, International Journal of Earth Sciences and Engineering, ISSN 0974-5904, 4(6), 67-70.

12. **Jakka, R. S.**, Ramaiah, B.J., and Ramana, G. V., (2011), “Dynamic characterization of settled pond ash: Correlation between SPT-N value and measured shear wave velocity”, International Journal of Geotechnical Earthquake Engineering,2(1), 83-97 (DOI: 10.4018/jgee.2011010106).

13. Chung, A.I., Neighbors, C., Belmonte, A., Miller, M., Sepulveda, H.H., Christensen, C., **Jakka, R.S.**, Cochran, E.S., and Lawrence, J. F., (2011), “The quake-catcher network rapid aftershock mobilization program following the 2010 M8.8 Maule, Chile Earthquake”, Seismological Research Letters, 82(4), 526-532 (DOI: 10.1785/gssrl.82.4.526).

14. **Jakka, R. S.***, Datta, M., and Ramana, G. V., (2011), “Seismic slope stability of embankments constructed with pond ash”, Geotechnical and Geological Engineering, 29(5), 821-835 (DOI: 10.1007/s10706-011-9419-8).

15. **Jakka, R. S.***, Datta, M., and Ramana, G. V., (2010), “Liquefaction Behavior of loose and compacted pond ash”, Soil Dynamics and Earthquake Engineering, 30(7), 580-590, 2010 (DOI: 10.1016/j.soildyn.2010.01.015).

16. **Jakka, R. S.***, Cochran, E. S., and Lawrence, J. F., (2010), “Earthquake source characterization by the isochrone back projection method using near-source ground motions”, *Geophys. J. Int.*, 182, 1058-1072 (doi: 10.1111/j.1365-246X.2010.04670.x).

17. **Jakka, R. S.***, Ramana, G. V., and Datta, M., (2010), “Shear strength characteristics of loose and compacted pond ash”, Geotechnical and Geological Engineering, 28, 763-778 (DOI: 10.1007/s10706-010-9337-1).
18. Cochran, E. S., Lawrence, J. F., Christensen, C. and **Jakka, R. S.**, (2009), “The Quake-Catcher Network: Citizen Science Expanding Seismic Horizons”, Seismological Research Letters, 80, 26-30 (DOI: 10.1785/gssrl.80.1.26).

International Conferences:

1. Shukla, R.P. & **Jakka, R.S.**, (2014), “A Critical Review on Seismic Bearing Capacity of a Strip Footing on Sloping Ground”, International Symposium on Geohazards: Science, Engineering and Management, Kathmandu, Nepal, 20-21 November, pp. 449-458.
2. Marrapu, B.M. and **Jakka, R.S.**, (2014), "Landslide Hazard Zonation Methods: A Crithical Review", 2nd International Conference on Sustainable Innovative Techniques in Civil and Environmental Engineering(SITCEE-2014), New Delhi, 4-5th January, Vol. 5, pp. 215-220.
3. Hussain, Md., **Jakka, R.S.**, and Sharma, M. L., (2013), “Effects of deep soil deposits on strong ground motion”, Proc. Of International Conference on Challenges in Disaster Mitigation and Management, Roorkee, India, 15 -17 February.
4. Nath, R.R., and **Jakka, R.S.**, (2012), “Effect of Bed-Rock Depth on Site Classification”, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, 24-28 September, pp. 1-9.
5. Marrapu, B.M., and **Jakka, R.S.**, (2012), “Analysis of a Road Embankment with Pond Ash in an Active Seismic Region”, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, 24-28 September, pp. 1-9.
6. Kirar, B., Maheshwari, B.K., and **Jakka, R.S.**, (2012), “Dynamic Properties of Solani Sand Reinforced with Coir Fibers”, 15th World Conference on Earthquake Engineering, Lisbon, Portugal, 24-28 September, pp. 1-10.
7. **Jakka, R. S.**, and Sitharam, T.G. (2010), “Future perspectives of pond ash utilization”, The First US-India Workshop on Global Geoenvironmental Engineering Challenges, New Delhi, India, 7th November, pp. 1-6.
8. **Jakka, R. S.**, Datta, M., and Ramana, G. V., (2010), “Shear Behavior of Impounded Ash”, Sixth International Congress on Environmental Geotechnics, New Delhi, India, 8-12th November, vol. 1, pp. 582-587.
9. Ramaiah, B.J., **Jakka, R. S.**, and Ramana, G. V., (2010), “Shear wave velocity measurements at slurry deposited coal ash ponds in Delhi, India”, Sixth International Congress on Environmental Geotechnics, New Delhi, India, 8-12th November, vol. 1, pp. 578-581.

10. Lawrence, J. F., Cochran, E. S., Christensen, C.M., **Jakka, R. S.,** and Chung, A.I., (2009), "The Quake-Catcher Network: A Community-Led, Strong-Motion Network with Implications for Earthquake Advanced Alert", AGU Meeting, San Francisco, CA.
11. **Jakka, R. S.**, Cochran, E. S., Lawrence, J. F. , Christensen, C.M., (2008), "Early Source Characterization of Earthquakes using the Back Projection Method", AGU Meeting, San Francisco, CA.
12. Lawrence, J. F., Cochran, E. S., Christensen, C. M., and **Jakka, R. S.**, (2008), "Distributed computing and MEMS accelerometers: The Quake Catcher Network", AGU Meeting, San Francisco, CA.
13. Datta, M., and **Jakka, R. S.,** (2007), "Geotechnical Evaluation and Control Measures for Slope Stability", *International workshop on seismic evaluation and strengthening of existing structures*, Shimla, 15th -16th June, 2007, Invited Lecture 8, pp. 8.1-8.20.
14. **Jakka, R. S.**, Datta, M. and Ramana, G. V., (2006), "Dynamic Stability of Tailings Dam", *International congress on Computational Mechanics and Simulation (ICCMS-06)*, IIT Guwahati, India, pp. 2004-2010.
15. **Jakka, R. S.**, Datta, M., and Ramana, G. V., (2005), "Evaluation of Seismic Stability of Coal Ash Embankments", *International congress on flyash utilization (Fly Ash India 2005)*, TIFAC, DST, New Delhi, India, pp. IV 8.1-15.
16. **Jakka, R. S.,** and Ramana, G. V., (2005), "Site Response Analysis of Kandla Port during Bhuj Earthquake", *International conference on advances in structural dynamics and its applications (ICASDA-2005)*, GITAM, Visakhapatnam, India, pp. 403-414.

National Conferences:

1. Shukla, R.P. and **Jakka, R.S.,** (2015), "A critical review on bearing capacity of a strip footing on sloping ground", 5th Young Indian Geotechnical Engineers Conference 2014, Vadodara, India, 14-15 March, pp. 58-65.
2. Srivastava, AK, Sharma, ML, Paul, DK., Das, J. and Jakka, RS (2014), "Deep Soil Characteristics in the Vicinity of Himalayas", Proc. of 15th Symposium on Earthquake Engineering, Roorkee, India, 11-13 December, pp. 74-86.
3. Kumar, A., Mittal, H., Chamoli, BP, Gairola, A., and Jakka, RS (2014), "Earthquake Early Warning System for Northern India", Proc. of 15th Symposium on Earthquake Engineering, Roorkee, India, 11-13 December, pp. 231-238.
4. Roy, K. and **Jakka, R.S.**, (2014), "Finite Element Modeling of Liquefaction on Layered Soil", Proc. of Indian Geotechnical Conf. IGC-2014, Kakinada, India, 18-20 December, pp. 1564-1571.

5. Marrapu, B.M. and **Jakka, R.S.**, (2014), "Application of Artificial Neural Network for the Assessment of Slope Stability", Proc. of Indian Geotechnical Conf. IGC-2014, Kakinada, India, 18-20 December, pp. 2162-2165.
6. Shukla, R.P. and **Jakka, R.S.**, (2014), "Bearing Capacity of Footings on Slopes", Proc. of Indian Geotechnical Conf. IGC-2014, Kakinada, India, 18-20 December, pp. 1993-1996.
7. Shukla, R.P. and **Jakka, R.S.**, (2014), "Critical Review of Pore Pressure Predictive Models", Proc. of Indian Geotechnical Conf. IGC-2014, Kakinada, India, 18-20 December, pp. 1637-1644.
8. **Jakka, R.S.**, and Roy, N. (2012), "Effect of Uncertainty of Bedrock Type & Its Location on Seismic Site Characterization", Proceedings of Indian Geotechnical Conference, Delhi, India, December 13-15, 2012, pp. 1-4.
9. Roy, N., **Jakka, R.S.**, and Wason, H.R. (2012), "Effect of Uncertainties in Site Characterization using Surface Wave Techniques", Proceedings of Indian Geotechnical Conference, Delhi, India December 13-15, 2012, pp. 1-4.
10. Roy, N., Wason, H.R., and **Jakka, R.S.** (2012), "Uncertainty in Geotechnical Site Characterization Using Surface Wave Techniques - A Review", ISET Golden Jubilee Symposium, Roorkee, India, October 20-21, 2012, pp. 1-9.
11. **Jakka, R. S.** (2012), "Earthquake-Induced Landslide Risk Assessment", National Conference and Field Study on Landslide Management, NIDM, Nainital, India, 22-24 March, 2012, pp. 1-18.
12. Roy, N., **Jakka, R.S.**, Wason, H.R. (2012), "Effect of Uncertainties in Site Characterization on Landslide Hazard Assessment", National Conference and Field Study on Landslide Management, NIDM, Nainital, India, 22-24 March, 2012, pp. 1-9.
13. **Jakka, R. S.,** and Ramana, G. V., (2006), "Influence of Local Soil Conditions on Ground Response", *National conference on Earthquake Disaster: Technology and Management (EARTH-2006),* NIT Allahabad, India, pp. I 19-22.
14. **Jakka, R. S.,** and Ramana, G. V., (2006), "One Dimensional Modeling of Ground Response", *National conference* on *National Disaster Management(NDM),* Andhra University, Visakhapatnam, pp. 113-119.
15. **Jakka, R. S.,** and Kiran T., (2001), "Computer Based Cost Models for Effective Management of Housing Schemes", *National level student symposium* (*Nirmitee-2000),* Maharastra Institute of Technology, Pune.

TEACHING EXPERIENCE

At Undergraduate Level: Foundation Engineering (CE 302) and Elements of Earthquake Engineering (CE 404) at NIT Jalandhar.

At Postgraduate Level: Foundation Engineering (CE 204) at CiSTUP/IISc.

Teaching Engagements@ IIT R:

- Spring Semester: EQ-524-Earthquake Resistant Design of Foundations(3L-1T-0P)

  EQ-571-Ground Improvement Techniques (3L-1T-0P)

  EQ-572-Machine Foundations(3L-1T-2P)

- Autumn Semester:EQ-521-Geotechnical Earthquake Engineering(3L-1T-0P)

  DM-502-Natural Hazards and Impact Assessment(3L-1T-0P)

BOOKS EDITED

Prepared a technical document titled "Technical Document on Geotechnical/ Geophysical Investigations for Seismic Microzonation Studies of Urban Centres in India" for National Disaster Management Authority (NDMA), Government of India, along with Prof. T.G. Sitharam.

Edited proceedings of QIP workshop titled "Challenges in Seismic Site Characterization and Solutions through Recent Developments", on 10th December, 2014.

MEMBERSHIP OF TECHNICAL SOCIETIES

Member	ISSMGE (International Society for Soil Mechanics and Geotechnical Engineering)
Member - Life	ISET (Indian Society for Earthquake Technology)
Member - Life	IGS (Indian Geotechnical Society)

MAJOR PROJECTS UNDER TAKEN

Quake-Catcher Network (QCN)

The Quake-Catcher Network (QCN) is a seismic network that implements distributed/volunteer computing with the potential to provide critical earthquake information by filling in the gaps between traditional seismic stations. Microelectromechanical systems (MEMS) sensors detect vibrations within the frequency range of local seismic waves (0.1–20 Hz), so any internet-connected computer with an internal or external MEMS accelerometer can become a strong-motion seismic station. The QCN, a distributed computing project, uses idle computer cycles and MEMS sensors to increase the number of seismic stations, which may soon

provide faster and more accurate detection and characterization of moderate to large earthquakes. (For more information, please refer to http://qcn.stanford.edu/)

I was involved in the implementation and subsequent testing of various triggering algorithms for QCN in Fortran, C and Matlab; I was also involved in managing the trigger data base using MySQL and PHP. I have analyzed the triggering analysis of different earthquakes measured by laptop MEMS accelerometers during early testing of the QCN system. I have developed a new formulation in isochrone back projection to quickly arrive at the source characterization (slip distribution as well as their magnitudes) using near source ground motions. The QCN, with the potential for thousands to hundreds of thousands of sensors, can be able to provide large number of near source strong motion data that is required for the early source characterization using back projection method.

Doctoral Thesis: ***"Liquefaction Resistance and Dynamic Properties of Coal Ash"***
Supervisors: *Prof. Manoj Datta,* Civil Engg. Dept., IIT Delhi
Dr. G.V. Ramana, Civil Engg. Dept., IIT Delhi

Utilizing ash in large earthworks for geotechnical applications minimizes ash disposal problems. Construction of geotechnical structures with ash particularly in earthquake prone regions requires knowledge of dynamic behaviour of these materials. As very limited literature is available on this aspect, an attempt has been made here to comprehensively characterize liquefaction behaviour and dynamic properties of coal ash materials through various laboratory and field tests.

Ash samples collected separately from inflow and outflow points of two ash ponds, and Yamuna sand (reference material) have been subjected to laboratory testing. General material characterization as well as geotechnical characterization of the materials has been carried out in addition to their complete dynamic characterization. All ash samples from outflow point are in silt range (referred as 'fine ash') whereas all ash samples from inflow point are predominantly in fine sand range (referred as 'coarse ash'). Both the type of ash materials exhibited some special morphological characteristics that are distinctly different from typical soils. Coarse ash samples exhibited higher strengths than Yamuna sand in both loose and dense states, whereas fine ash samples exhibited strengths comparable with Yamuna sand. Residual strengths of the ash materials are comparable with that of sand.

Liquefaction resistance of the samples in the laboratory is evaluated using stress controlled cyclic triaxial tests conducted on specimens prepared by static compaction. Samples of outflow point exhibit significantly lower cyclic strengths in both dense and loose states as compared to inflow samples as well as Yamuna sand. Further applicability of *SSL* concepts to ash materials has also been verified. Strain controlled cyclic triaxial tests were also conducted to determine the dynamic properties of the materials. Modulus reduction curves of various ash materials (both fine and coarse) tested are found to be well matching with curves for soils given in literature.

Low liquefaction resistance of ash deposits is estimated in the field from the shear wave velocities measured using SASW and crosshole tests, and also from *N* values. The shear wave velocities measured on slurry deposited ash (in ash ponds) are observed significantly lower compared to the velocities of natural soil deposits. This can be attributed to low density of the slurry deposited material and the special nature of ash particles containing intra-particle voids.

Dynamic response and slope stability of ash embankments (dykes) raised with coarse and fine ash materials under different seismic loading conditions have been assessed. The dynamic response and stability of embankments constructed with ash is observed to be similar to the response of the structures constructed with natural materials. The analysis also reveals that embankments constructed with fine ash are vulnerable to liquefaction hazards under high earthquake magnitudes. Further analysis carried for road embankments and fills with ash also shows favorable response.

Based on the results obtained from this study, it is concluded that the coal ash from ash ponds are suitable for use in construction of dykes of ash ponds, road embankments and fills for filling of low lying areas, under seismic loading conditions. Though both types of ash materials (fine and coarse) are found to be suitable to use under seismic conditions, proper precautions are necessary in using fine ash materials as they are more vulnerable to liquefaction. It is very important to ensure proper compaction in case of fine ash as their liquefaction resistance decreases substantially with decrease in density.

M.Tech Project: "***Numerical Investigation on Influence of Local Soil Conditions at Kandla Port during Strong Earthquakes"***

Supervisors:

Prof G. Gudhehus,	Dr. G.V.Ramana
Inst. of Soil & Rock Mech.	Civil Engg. Dept.,
University of Karlsruhe, Germany	IIT Delhi, New Delhi

The destructiveness of an earthquake at large depends upon local soil conditions in addition to other factors. An attempt has been made here to understand influence of local soil conditions on the selective damages observed at Kandla Port by carrying out site specific response analysis. The response is analysed by one-dimensional model, applying equivalent number of uniform stress cycles at the base. The appropriate base motion is developed using Seed and Idris technique. And Campbel's attenuation relationship is used to find maximum horizontal seismic acceleration. Simplified geotechnical profile is derived-developed based on several geotechnical investigation reports available with Kandla Port. Hypoplasticity constitutive law developed at University of Karlsruhe is used for modeling mechanical behavior of soil. The constitutive model parameters for local soils have been developed-interpreted by comparing with the parameters available in the literature. For the numerical solution, Finite Element Method (FEM) using ABAQUS software is used implementing user subroutines for the mentioned constitutive law. The numerical model captures the

essential damage phenomena such as liquefaction and lateral spreading as observed. The conducted site-specific response analysis has also demonstrated the influence of local soil conditions on occurred damages.

Workshops/Conferences Organized:

- Conducted QIP 1Day workshop, titled 'Challenges in Seismic Site Characterization and Solutions through Recent Developments' on 10th December, 2014.
- Involved in the organization of ISET golden jubilee symposium as well as 15th Earthquake Engineering Symposium.
- Served as advisory committee member for several conferences.

SUMMARY OF SPONSORED RESEARCH PROJECTS WITH DR. RS JAKKA

S.No.	Title of Project	Funding Agency	Financial Outlay	Year of start & total period	Name of P.I. and other investigators	Status Started or completed or in progress
01	Strong Ground Motion Studies and Its Applications	MoES, New Delhi	164.7 Lakhs	2011 (2-years)	Prof. Ashok Kumar; along with other Co-PIs.	Completed
02	Low Cost Sensors for Recording Earthquake Ground Motions	Faculty Initiation Grant, IITR	2.55 Lakhs	May 2011 (3 years)	Solo	Completed
03	**Development of Earthquake Early Warning System for Northern India**	MoES, New Delhi	**375. Lakhs**	June, 2013 (3-years)	Along with Prof. Ashok Kumar (PI); Dr. A. Gairola;	In Progress
04	Uncertainty in Site Characterization using Surface Wave Techniques and Its Implication	DST Young Scientist	27.58	July, 2014 (3-years)	Solo	Under Review

05	Site Characterization and Attenuation Studies for Garhwal-Kumaun Himalaya and Delhi Region	MoES	52.97	April, 2015 (3-years)	PI: My Self along with Prof. Ashok Kumar and Prof. M.L Sharma	Tentatively Accepted

SUMMARY OF CONSULTANCY PROJECTS WITH DR. RS JAKKA

Number of Consultancy Projects : 04 (Completed)
: 07 (In progress)
Total Amount : 127.7 Lakhs

THESIS SUPERVISED:

MTech. Dissertations Guided

No. of M.Tech Dissertations Guided :18 Completed
:04 On going

S.No.	Thesis Title	Year	Name of the Student	Co-Supervisor
1	Seismic Slope Stability Analysis Of Ash Embankments	2011-12	Balendra Mouli	Solo
2	Influence Of Local Site Conditions On Strong Ground Motion	2011-12	Ritu Raj Nath	Solo
3	Feasibility Study For Development Of Low Cost Sensor Accelerograph And Its Triggering Algorithms	2011-12	Sidharth Garg	Solo
4	Influence Of Local Site Conditions On Strong Ground Motion Characteristics At Tarai Region Of Uttarakhand	2012-13	Bhavesh Pandey	Prof. Ashok Kumar
5	Study Of Noise Characteristics Of Strong Motion Sensor And Development Of Software For Real Time Testing Of EEW Algorithms	2012-13	Bhanu Chamoli	Prof. Ashok Kumar
6	Development Of A Monte-Carlo Inversion Technique For MASW Data	2012-13 (**IDD Program**)	Anil Kumar	Prof. RGS Sastry, **Earth Science Dept.**
7	Evaluation Of Dynamic Response Of Deep Soils	2012-13	Md. Hussain	Prof. ML Sharma
8	Modelling Of Soil Liquefaction By Finite Element Method	2013-14	Krishanu Roy	Solo
9	Estimation Of Earthquake Epicentral Distance For Earthquake Early Warning System	2013-14	Abhishek Sharma	Prof. Ashok Kumar
10	Surface Wave Propagation In Multilayered Soil Media Due To An Active Source	2013-14	Kvita Tandon	Prof. HR Wason

11	Influence Of Local Site Effects On Earthquake Early Warning System	2013-14	Shashi Pratap Singh	Prof. Ashok Kumar
12	Deep Soil Effect On Strong Ground Motion Characteristics	2013-14	Shivani Singh	Prof. ML Sharma
13	Pine Needle Reinforced Soil For Road Embankment Slope Protection – A Laboratory Study	2013-14	Vivek Singh	Dr. G.D. Ransinchung, **Civil Engg. Dept.**
14	Effect On Uncertainty Of Bedrock Type & Its Location On Seismic Site Characterization	2014-15	Ruchika Saini	Solo
15	Landslide Hazard Zonation	2014-15	Aniket Desai	Dr. Daya Shanker
16	Deep Soil Effects On Site Amplification	2014-15	Deepika Sayana	Prof. ML Sharma
17	Testing Of EEW Algorithms Using Model Systems	2014-15	A.Shivaditya	Prof. Ashok Kumar
18	Numerical Simulation Of Driven Pile Problem	2014-15 **(DAAD Scholarship)**	Divya Varkey	Prof. Dr. Christian Moormann, **Universität Stuttgart, Germany**

Currently, four more dissertations are on progress, including one under DAAD scholarship.

PhD Thesis Supervised

No. of Ph.D Thesis Guided : 1 Completed
: 4 On going

S.No	Thesis Title	Registration Year	Name of the Student	Co-Supervisor	Status
1	Uncertainty in Site Characterization using Surface Wave Technique	2011	Narayan Roy	Prof. HR Wason	Completed
2	Dynamic Strength Characteristics of Reinforced Sand	2011	Babulu Kirar	Prof. BK Maheshwari	On Going
3	Seismic Slope Stability Aspects of Natural Slopes/Landslides	2012	Balendra Mouli	Solo	On Going
4	Analysis of Foundations on Sloping Grounds under Earthquake Loading	2013	Rajesh Shukla	Solo	On Going
5	Site Characterization and Seismic Hazard Assessment of Northern Region of India	2013	Bhavesh Pandey	Solo	On Going

SOFTWARE SKILLS

- TWODAN – Used in the Design of Dewatering System for Delhi Metro.
- ABAQUS – Used in Masters project work for modeling level ground response.
- SHAKE2000, used for ground response analysis of Kandla Port.
- QUAKE/W – Used for identifying zones of liquefaction of coal ash embankment for evaluating its seismic stability. And also used in a consultancy project for dynamic stress analysis of Salma dam.
- SLOPE/W – Used for evaluating permanent deformations and post seismic stability of coal ash embankment. And also used for Static and Pseudo-static stability analysis of Salma Dam and for several other projects.
- General purpose softwares: Matlab, C, VB, FOTRAN77
- MySQL – Used to manage QCN database
- Also familiar with common civil engineering softwares such as STAAD Pro and drawing softwares such as AutoCAD.

Working Experiences in ***Consultancy Works:***

- Estimation of site specific seismic parameters for various project sites.
- Designing of "Raising the Height of Existing Tailings Dam at Zawar Mines to RL 424 m" for Hindustan Zinc Limited, Udaipur.
- Static and Pseudo-static Slope Stability Analysis of Salma Dam using Slope/W.
- Dynamic stress Analysis of Salma Dam using Quake/W.
- Developing modulus reduction and damping curves of shell and core materials using Cyclic Triaxial Testing System for Salma Dam, Afganistan.
- Design of Dewatering Scheme for the construction of underground station at Barakhamba Road, Delhi for DMRC.
- Dynamic Site Characterization of Rajghat Ash Pond using Spectral Analysis of Surface Waves (SASW).
- Evaluation of Liquefaction Potential of Badarpur Ash Pond from SASW, SPT and cyclic triaxial tests for construction of thermal power plant on the abandoned ash pond.

Experiences in ***Setting up Laboratory Equipments****:*

- Design and setting up of laminar box along with shake table.
- Setting up the Digital Pneumatic Triaxial Testing setup.
- Setting up the Cyclic Triaxial Testing setup.
- Setting up the Spectral Analysis of Surface Waves (SASW) system.
- Installation of Flexible Wall Permeameter set up.

PERSONAL PROFILE

Date of Birth	: 1st August, 1979
Gender	: Male
Marital Status	: Married
Children	: One
Nationality	: Indian
Languages Known	: English, Hindi and Telugu
Address for Communication	: Earthquake Engg. Dept., IIT Roorkee - 247667
Favorite pursuits	: Reading books, listening to devotional music, playing indoor games like chess, etc..
Strengths	: Good logical thinking, patience to work till completion, self confidence and positive thinking.

REFEREES

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I hereby declare that all the information provided by me in this resume is true to the best of my knowledge and I accept the responsibility for any misrepresentation.

(Dr. Ravi Sankar Jakka)