

BIODATA

Vijaya. R
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EDUCATIONAL QUALIFICATIONS

COURSE	INSTITUTE	MARKS OBTAINED
PhD (Civil Engineering)	Indian Institute of Technology Madras, Chennai	8.33 / 10
MTech (Soil Mechanics and Foundation Engg.)	Sardar Vallabhai National Institute of Technology, Surat.	9.37 / 10
BE (Civil)	Alagappa Chettiar College of Engg and Tech, karaikudi.	8.78 / 10
Higher Secondary (12 th Std)	Jawahar Mat. Hr. Sec. School, Neyveli.	93.33%
High School (10 th Std)	Jawahar Mat. Hr. Sec. School, Neyveli.	90.72%

DOCTORAL RESEARCH

Area of Research: “Numerical modelling of seismic site response” – Linear (3D) and Non-linear (2D) dynamic analysis of Kutch basin by spectral element method and finite difference method is carried out and site amplification factor is derived. The numerical model for Kutch basin located in western part of India is developed and validated with recorded ground motion data. The empirical correlations are proposed for basin amplification factors, considering all basin parameters.

Guide: Prof. A. Boominathan, Geotechnical Engineering Division, Dept. of Civil Engg., IIT Madras.

POST GRADUATION PROJECT

Organisation: Structural Engineering Research Centre - CSIR, Chennai, - “Advanced Seismic Testing and Research Laboratory”

Area of Research: “Soil Structure Interaction of soft-storey buildings” – Non-linear numerical modeling and pushover analysis is carried out for stilt buildings with fixed base and flexible base and the seismic response is studied.

Guide: Dr. G. V. Rama Rao, Scientist, SERC-CSIR, Chennai.
Prof. C. H. Solanki, Applied mechanics Dept., NIT Surat.

POST GRADUATION - INTERNSHIP PROJECT

Organisation: IIT Madras, Geotechnical Engineering Division (Soil Dynamics & Earthquake Engg. Lab).

Research work: Numerical modeling and dynamic analysis of vertical and batter pile foundations subjected to cyclic loading.

Guide: Prof. A. Boominathan, IIT Madras.

UNDER GRADUATION PROJECT

Project Work: “Design of optimum mix for hollow concrete blocks using flyash & quarry dust”. Cement and sand are partially replaced by flyash and quarry dust in the hollow concrete blocks and optimal mix is designed based on the compressive strength.

Internship: Inplant Training in NLC. Ltd Neyveli for 1 week

SOFTWARE SKILLS

- FLAC2D, SHAKE, SPEED
- Diploma in CIVIL CADD (AutoCadd, ArchiCadd, StaadPro)
- Primavera
- MS Office

OTHER EXPERIENCES AT IIT MADRAS

Assisted in report preparation on the recommendation of suitable foundations for the proposed buildings for Tamil Nadu Slum Clearance Board projects. Also assisted in other consultancy works involving geotechnical and geophysical field testing including Multi-Channel Analysis of Surface waves tests to arrive at a two-dimensional subsoil profile.

PUBLICATIONS

Journals

Vijaya, R., Boominathan, A., and Mazzieri, I. (2020). “3D Ground response analysis of simplified Kutch basin by spectral element method.” *Journal of Earthquake and Tsunami*, 14(1), 2050003. <https://doi.org/10.1142/S1793431120500037>.

Vijaya, R., and Boominathan, A. “Modelling the 2D Seismic response of Kutch basin in Indian Subcontinent.” *Soil Dynamics and Earthquake Engineering*, (Under 2nd Review).

Rama Rao, G. V., Sunil, J. C., and **Vijaya, R.** “Soil Structure Interaction effects on seismic response of soft storey buildings.” *Sadhana*, (Under Review)

Book Chapter

Boominathan, A., Krishna, Kumar., and **Vijaya, R.** (2018). “Site-Specific Ground motion studies for a deep soil site near Ahmedabad, Gujarat” in the book “Recent challenges and Advances in Geotechnical Earthquake Engineering” IGI Global.

Conferences

Vijaya, R., Boominathan, A., and Mandal, P. (2017). “Seismic wave amplification studies for shallow basins considering basin edge effect.” *Proceedings of 3rd International Conference on Performance based design in Earthquake Geotechnical Engineering*, Vancouver, Canada.

Vijaya, R., Boominathan, A., Mandal, P., and Mazzieri, I. (2018). “Seismic wave amplification studies considering 3D basin effect by Spectral Element Method.” *Proceedings of 16th Symposium on Earthquake Engineering*, Roorkee, India.

Vijaya, R., Boominathan, A., Mandal, P., and Mazzieri, I. (2019). “Numerical analysis of three-dimensional basin effects in the Kutch basin, India.” *Proceedings of 7th International Conference on Earthquake Geotechnical Engineering*, Rome, Italy.

Vijaya, R., Rama Rao, G. V., Gopalakrishnan, N. and Solanki, C. H., “Soil Structure Interaction studies on soft storey buildings”, Indian Engineering Congress, Chennai (2013).

ACHIEVEMENTS:

- Anna University 19th rank holder in BE Civil.
- Ranked 66 in Nationwide Education and Scholarship Test (2012).
- Won Best All-Round Outgoing Student Award (2008-2012 batch) in A.C.Tech, Karaikudi.