



Assistant Professor
Department of Civil Engineering
S.V. National Institute of Technology Surat, Surat 395007
[Office: ARC 203 (Advance Research Center), Behind Applied Mechanics Department, Opposite
Production Engineering Lab.]



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Research Area of Interest

- Computational Geomechanics
- Constitutive Modelling in Geotechnics
- Physical Modelling in Geotechnical Engineering
- Use of PIV Technique in Geotechnical Engineering
- Deep Foundations
- Deep Excavations
- Seismic Hazard Analysis
- Dynamic Soil Properties
- Conservation of Heritage Structures

Post-Doctoral Fellow [March 2019 – September 2019] IIT Madras

Ph.D. - Geotechnical Engineering [2015-2019] IIT Madras

M.Tech. - Soil Mechanics & Foundation Eng. [2012-2014] Sardar Vallabhbhai National Institute of Technology, Surat

B.E. (Civil Engineering) [2009-2012] University of Mumbai

Diploma in Civil Engineering [2005-2009] Shri Bhagubhai Mafatlal Polytechnic-Mumbai (with 1 year In-plant training)

ACADEMIC QUALIFICATIONS

Degree/Certificate	Institute/University	Year of Passing	CGPA/Marks
Ph.D. (Geotechnical Eng.)	IIT Madras	2019	9.50
MTech. - SMFE	NIT Surat	2014	9.77
B.E. - Civil	University of Mumbai	2012	78.53%
Diploma - Civil	SBM Polytechnic-Mumbai	2009	80.71%
S.S.C. (10 th std)	Maharashtra State Board - English Medium	2005	76.66%

SMFE-Soil Mechanics and Foundation Engineering

ACADEMIC ACHIEVEMENTS

- Best Paper Award: Indian Geotechnical Conference 2019, Technical Session 1-4, organised by Indian Geotechnical Society Surat Chapter and SVNIT Surat.
- Institute Gold Medal for securing first position at Master of Technology in Civil Engineering with specialisation in Soil Mechanics and Foundation Engineering - SVNIT Surat
- Recipient of "Mrs. and Mr. M. D. Desai award of Cash Prize Rs. 15000/-", presented on the 12th Convocation SVNIT Surat (1st February 2015)
- 2nd rank in academics in Second year of B.E. Civil
- 1st rank in Bridge making with popsicle sticks at the Annual Sports and Cultural Fest 2011-2012 during B.E. Civil
- 3rd rank in academics in Final year of B.E. Civil

Ph. D. THESIS TOPIC

Experimental and Numerical Studies on Bearing Capacity of Circular Open Caissons

POST GRADUATE DISSERTATION TOPIC

Study on Behaviour of Pile Wall used as Retention System for Deep Excavation: Experimental and Numerical Study

UNDER-GRADUATE PROJECT TOPIC

Analysis and Design of Composite-Dam

DIPLOMA PROJECT TOPIC

Extension of Building using HILTI Technique

PUBLICATIONS

Journal (SCOPUS /SCI Journal)

1. **Chavda, J. T.** and Dodagoudar, G. R. (2020) Experimental studies on a circular open caisson. *International Journal of Physical Modelling in Geotechnics*, doi: 10.1680/jphmg.20.00050. Publisher: **ICE London (SCOPUS and SCI)**
2. **Chavda, J. T.** and Dodagoudar, G. R. (2019) On vertical bearing capacity of ring footings: Finite element analysis, observations and recommendations, *International Journal of Geotechnical Engineering*, doi: 10.1080/19386362.2019.1648737. Publisher: **Taylor & Francis (SCOPUS)**

3. **Chavda, J. T.**, Mishra, S. R. and Dodagoudar, G. R. (2020) Experimental evaluation of ultimate bearing capacity of the cutting edge of open caisson, *International Journal of Physical Modelling in Geotechnics*, **20**(5): 281–294. doi: 10.1680/jphmg.18.00052. Publisher: [ICE London](#) (**SCOPUS** and **SCI**).
4. **Chavda, J. T.** and Dodagoudar, G. R. (2019) Finite element evaluation of vertical bearing capacity factors N'_c , N'_q and N'_γ for ring footings, *Geotechnical and Geological Engineering*, **37**(2), 741-754. Publisher: [Springer](#) (**SCOPUS**)
5. **Chavda, J. T.** and Dodagoudar, G. R. (2018) Finite element evaluation of ultimate capacity of strip footing: Assessment using various constitutive models and sensitivity analysis, *Innovative Infrastructure Solutions*, **3**(1), Art. No. 15, 10 pp. Publisher: [Springer](#) (**SCOPUS**)
6. **Chavda, J. T.**, Solanki, C. H. and Desai, A. K. (2019) Lateral response of contiguous pile wall subjected to staged excavation: Physical and numerical investigations. *Indian Geotechnical Journal*, **49**(1), 90-99. Publisher: [Springer](#) (**SCOPUS**)

Conference Proceeding Published as Book Chapter

1. **Chavda, J. T.** and G. R. Dodagoudar (2018). Finite element modelling of extent of failure zone in c - ϕ soil at the cutting edge of open caisson, *Numerical Methods in Geotechnical Engineering IX: Proceedings of the 9th European Conference on Numerical Methods in Geotechnical Engineering*, Porto, Portugal, 25 - 27th June 2018, doi:10.1201/9781351003629-126, Publisher: [Taylor & Francis](#) (**SCOPUS**)
2. **Chavda, J. T.** and G. R. Dodagoudar (2020). Assessment of predictive equations of extents of failure zone in sand beneath the cutting edge of open caisson using image analysis, *Proceedings of the 4th GeoMEast International Congress and Exhibition*, Cairo, Egypt 2020. Publisher: [Springer](#) (**SCOPUS**)
3. **Chavda, J. T.**, Paul, A. and Menon, A. (2020). A review on tunnelling induced ground settlements in clayey soil, *Proceedings of the 4th GeoMEast International Congress and Exhibition*, Cairo, Egypt 2020. Publisher: [Springer](#) (**SCOPUS**)
4. **Chavda, J. T.** and G. R. Dodagoudar (2019). Experimental evaluation of failure zone in sand beneath the ring footing and cutting edge of open caisson using image analysis. *Indian Geotechnical Conference 2019*, SVNIT Surat, Gujarat, India, December 2019, doi:10.1007/978-981-33-6346-5_24. Publisher: [Springer](#) (**SCOPUS**)

Conference/Seminar

1. Regunta, M., Karthik, A. V. R. and **Chavda, J. T.** (2021). Finite element evaluation of shape factors and bearing capacity factors for circular footing. *Advances in Construction Technology and Management* (ACTM-2021), College of Engineering Pune, Pune, India, 11-12th March, 2021, 9 Pages.
2. Paul, A., **Chavda, J. T.**, Aishwarya, K.V., Lakshmi, A.K., Menon, A. and Bais, S. (2020). Structural risk assessment methodology for heritage impact assessment. *ICOMOS India Scientific Symposium 2020, Structural and Material Analysis in Built Heritage*, IIT Madras, Chennai, India, May 2020.
3. **Chavda, J. T.** and G. R. Dodagoudar (2018). Extent of failure zone in soil at the cutting edge of open caisson: FE evaluation and regression analysis. *8th Conference on Deep Foundation Technologies for Infrastructure Development in India*, IIT Gandhinagar, Gujarat, India, November 2018. Publisher: [Deep Foundation Institute](#).
4. **Chavda, J. T.** and G. R. Dodagoudar (2017). Evaluation of ultimate capacity of a single barrette using finite element analysis, *Indian Geotechnical Conference 2017*, Guwahati, December 2017, Paper No. Th16_314, 4 pp.
5. **Chavda, J. T.**, Solanki, C. H. and Desai, A. K. (2015) Physical and numerical study on behaviour of pile wall retention system for deep excavation. *Proceedings of the 5th Indian Young Geotechnical Engineers Conference*, M. S. University Baroda, Vadodara, Gujarat, March 2015, 211-212.
6. **Chavda, J. T.**, Maheshwari, B. K. and Dodagoudar, G. R. (2015) Effect of number of loading cycles on dynamic properties of Solani river sand. *International Conference on Infrastructure Development for Environmental Conservation and Sustenance*, INDECS-15, ACE - Hosur, Hosur, 28-30 October 2015.

7. **Chavda, J. T.**, Solanki, C. H. and Desai, A. K. (2015) Numerical study on anchored pile wall deformations. *6th International Geotechnical Symposium on Disaster Mitigation in Special Environmental Conditions*, IIT-Madras, Chennai, January 2015.
8. **Chavda, J. T.**, Solanki, C. H. and Desai, A. K. (2014) Study on behaviour of diaphragm wall used as retention system for deep excavations. *Indian Geotechnical Conference 2014*, JNTU Kakinada, Kakinada, December 2014.
9. **Chavda, J. T.**, Solanki, C. H. and Desai, A. K. (2014) Study on behaviour of pile wall used as retention system for deep excavation: Experimental and numerical study, Technical Note in 10 days STTP on *Advances in Geotechnical Engineering, AGE-2014*, SVNIT Surat, June 2014.
10. Bajaj, K., **Chavda, J. T.** and Vyas, B. (2013) Seismic behaviour of buildings on different types of soil. *Indian Geotechnical Conference 2013*, IIT-Roorkee, December 2013.

CONFERENCES / STTPs / WORKSHOPS / NATIONAL SEMINARS / FINISHING SCHOOLS

1. Indo Korean Workshop on “Geotechnology For Urban Development” 12th December 2012 (Attended)
2. Indian Geotechnical Conference – 2012, IIT-Delhi, December 2012 (Attended)
3. Structural Engineering Convention – 2012, SVNIT Surat, Surat, December 2012 (Attended and Volunteered)
4. Structural Engineering Research Centre - Chennai & Geotech Lab. at IIT-Madras (Visited as educational Trip 2012)
5. National conference on Emerging Trends in Engineering (NCETE-13), January 2013, M. H. Saboo Siddik College of Engineering, Mumbai. (Presented a paper titled *Analysis and design of composite dam*)
6. One day Finishing School on “Overview of Ground Improvement Techniques”, SVNIT Surat, Surat, April 2013 (Attended)
7. National Seminar on “Advances in Geotechnical Engineering”, SVNIT Surat, Surat, June 2013 (Attended and Volunteered).
8. 5 days Short Term Training Programme on “Geotechnical Investigations, Interpretations and Improvements” ,GIII-13, SVNIT Surat, Surat, October 2013 (Attended)
9. Workshop on Large Diameter Rock Socketed Piles, IIT-Bombay, November 2013 (Attended)
10. International Conference on “Deep Foundation Technologies for Infrastructure Development of India”, IIT-Bombay, Mumbai, November 2013 (Attended)
11. Indian Geotechnical Conference 2013, IGC-2013, IIT-Roorkee, December 2013. (Attended and presented a paper titled *Seismic behaviour of building on different types of soil*)
12. Finishing School Cum Workshop on “Ground Improvement Technique”, SVNIT Surat, Surat, February 2014 (Attended)
13. Presented a Lecture on “Study on Behaviour of Pile Wall Used as Retention System for Deep Excavation: Experimental & Numerical Study” in 10 days STTP on Advances in Geotechnical Engineering, AGE-2014, SVNIT Surat, Surat, July 2014.
14. One day Seminar and Panel discussion on Geotechnical Infrastructure Engineering and Equipment Technology – 2014, VJTI Mumbai, Mumbai (Attended)
15. 15th Symposium on Earthquake Engineering, IIT Roorkee, Roorkee December 2014, (Attended)
16. International Conference - Infrastructure Development for Environmental Conservations and Sustenance, INDECS-15, ACE Hosur, Hosur, October 2015 (Presented a paper titled *Effect of number of loading cycles on dynamic properties of Solani river sand*)
17. One day Workshop - Deep Foundations in Liquefiable Soils and Deep Excavation Experiences, IIT Madras, Chennai, December 2016 (Attended)
18. Indian Geotechnical Conference 2016, IGC 2016, IIT Madras, Chennai, December 2016 (Attended)
19. Two days Seminar - Pile Foundations - Advances in Design and Construction Practices, SVNIT Surat, Surat, May 2017 (Attended)
20. 9th European Conference on Numerical Methods in Geotechnical Engineering, Porto, Portugal, 25 - 27th June 2018 (Presented a paper titled *Finite element modelling of extent of failure zone in c-φ soil at the cutting edge of open caisson*)

21. 8th Conference on Deep Foundation Technologies for Infrastructure Development in India, IIT Gandhinagar, Gujarat, India, November 2018 (Presented a paper titled Extent of failure zone in soil at the cutting edge of open caisson: FE evaluation and regression analysis)
22. International Symposium on Geotechnical Aspects of Heritage Structures- 2019, IIT Madras, Chennai, 16th - 17th September 2019 (Attended)
23. One week Short Term Training Programme on “Pedagogy & Research Methodology (PRM – 2019)” , SVNIT Surat, November 2019 (Attended)
24. Indian Geotechnical Conference 2019, IGC 2019, SVNIT Surat, Gujarat, December 2019 (Attended and Presented a Technical Paper)

INVITED LECTURES

1. Presented a Lecture on “Study on Behaviour of Pile Wall Used as Retention System for Deep Excavation: Experimental & Numerical Study” in 10 days STTP on *Advances in Geotechnical Engineering*, AGE-2014, SVNIT Surat, Surat, July 2014.
2. Presented a Lecture on “FE Analysis of Single Pile, Piled-Raft, Single & Group Barrette” in 1-Day Seminar at NIT Warangal, 25th March 2017.
3. Presented a Lecture on “Image Analysis: Application in Geotechnical Engineering” in 5 days STTP on *Exploring Research Topics and Techniques of Technical Writings*, SVNIT Surat, 25th – 29th December 2019.
4. Presented a Lecture on “Some Tips on Preparing Graphs and Making Presentation” in 5 days STTP on *Exploring Research Topics and Techniques of Technical Writings*, SVNIT Surat, 25th – 29th December 2019.
5. Presented a Lecture on “Image Analysis: Applications in Geotechnical Engineering” in Webinar hosted by IGS Guntur Chapter, Andhra Pradesh, 20th April, 2020.
6. Presented a Lecture on “Deep Excavations in Urban Areas” in 5-Days Webinar Series on *Prominent Areas of Civil Engineering* organised by Department of Civil Engineering, Vidyavardhini’s College of Engineering & Technology, Vasai, Mumbai, 30th – 17th May 2020.
7. Presented a Lecture on “Deep Excavations Challenges in Urban Areas” in Webinar hosted by Ambalika Institute of Management & Technology, Lucknow, Uttar Pradesh, 30th May, 2020.
8. Presented a Lecture on “Evaluation of Bearing Capacity Factors of Strip and Ring Footings using FEM” in Webinar hosted by IGS Guntur Chapter, Andhra Pradesh, 26th May, 2020.
9. Presented a Lecture on “Well Foundation – An Overview” in Webinar hosted by IGS Guntur Chapter, Andhra Pradesh, 10th July, 2020.
10. Presented a Lecture on “Dynamic Soil Properties” in TEQIP III sponsored 5-Days FDP on *Future Trends in Earthquake Resistant Design of Structures* (FTERDS2020), Department of Civil Engineering, Bundelkhand Institute of Engineering and Technology Jhansi, 17th – 21st August 2020.
11. Presented a Lecture on “Heritage Impact Assessment: Geotechnical Aspects” in TEQIP III sponsored 5-Days STTP on *Urban Heritage Conservation: Issues and Challenges*, Department of Civil Engineering, SVNIT Surat, 31st August – 04th September 2020.
12. Presented a Lecture on “Image Analysis: Applications in Civil Engineering” in TEQIP III sponsored 10-Days STTP on *Assessment of Engineering in Infrastructural Development*, Department of Civil Engineering, Government College of Engineering Jhalawar, 26th October – 04th November 2020.
13. Presented a Lecture on “Applications of Image Analysis in Geotechnical Engineering” in TEQIP III sponsored 5-Days STTP on *Advances in Geotechnical Engineering*, Department of Civil Engineering, SVNIT Surat, 19th November – 23rd November 2020.
14. Presented a Lecture on “Heritage Impact Assessment for Agra Metro” in TEQIP III sponsored 5-Days STTP on *Metro Construction and Management*, Department of Civil Engineering, SVNIT Surat, 14th December – 18th December 2020.
15. Presented a Lecture on “Heritage Impact Assessment for Underground Construction” in AICTE sponsored 5-Days STTP on *Sustainable Materials & Resilient Buildings Philosophy, Design, Implementation, and Performance*, Department of Civil Engineering, Kakatiya Institute of Technology & Science, Warangal, 4th January – 8th January 2021.

16. Presented a Lecture on “Theory of Soil Compressibility and Consolidation Theory” in TEQIP III sponsored expert lecture arranged by Department of Civil Engineering, Government College of Engineering Jhalawar, 25th December – 26th December 2020.
17. Presented a Lecture on “Deep Excavation Challenges” in 5-Days STTP on *Sustainable Development in Civil Engineering* organised by Department of Civil Engineering, M.M.M. University of Technology, Gorakhpur (U.P.), 8th – 12th February 2021.
18. Presented a Lecture on “An Overview on Deep Excavations in Urban Areas” in 1-Day Workshop on *Various Aspects in Civil Engineering* organised by Department of Civil Engineering, G H Raisonni College of Engineering & Management, Pune, 12th February 2021.

GIAN PROGRAM

1. Seismic Analysis and Design of Masonry Structures, GIAN, IIT Madras, Chennai, 08-20 February, 2016 (Secured "B" grade i.e., 8/10)
2. Constitutive Modelling on Practical Geotechnical Analysis, GIAN, IIT Bombay, 06-16 June, 2016 (Secured "A" grade, highest grade i.e., 10/10)
3. Advances in Seismic Hazard Analysis and Soil-Structure Interaction, GIAN, IIT Madras, Chennai, 18-30 July, 2016 (Secured "S" grade, highest grade i.e., 10/10)

DETAILS OF INDUSTRIAL TRAINING (COMPANY & DURATION)

1. Worked as Lecture in Rizvi College of Engineering, Mumbai for 3 months
2. Worked as Project Associate for 2 months in Earthquake Engineering Department, IIT-Roorkee
3. Summer Internship at GLOBAL GEOTECHNICS – Geotechnical Consultants, at Mumbai for period of 2 months (Duties: Deep excavations, Touch pile, PVD, Uplift anchors, etc.)
4. 1 year In-plant Industrial Training during Diploma, appointed as Junior Engineer
 - Space Engineers – 6 months (Mumbai-28 storey tower Construction)
 - Universal Consultants – 6 months (Mumbai-22 storey tower Construction)
(Duties: Site supervising, Piling - shore and structure piles, RMC plant quality control, quantity estimations, concrete design, pile raft construction, etc.)
5. Seismic Site Characterization of Kanamadi Region for Wind Farm Development, North Karnataka, A Consultancy project, IIT Madras
6. Evaluation of tunnelling and excavation induced surface settlement for Heritage Impact Assessment for the Heritage structures in the vicinity of proposed Agra Metro Project.

RESEARCH PROJECTS

1. Seed Project, Amount: 9.70 lakhs, Role: PI, Title of Project: Large deformation problems in Geotechnical Engineering: Experimental and Numerical evaluation

CONSULTANCY PROJECTS

1. Preparation of Engineering Report and vetting the report prepared by COMACODE for Kalpasar Project with site visits and attending meetings, M/s Coastal Marine Construction & Engg Ltd, Amount: 10.32 lakhs, Role: Co-Pi, Status: Ongoing.
2. Geotechnical Consultancy services for review of Geotechnical Reports, Foundation recommendation, drawings and field test reports, Ayodhya Ram Mandir, L&T Construction Buildings & Foundation, Amount: 6.50 lakhs, Role: Co-Pi, Status: Ongoing.
3. Providing consultancy for Adani Solar Power Project Khavda Gujarat, Adani Green Energy Ltd, 3.50 lakhs, Role: Co-Pi, Status: Ongoing.
4. Sheet pile excavations at Hazira Port Surat, Grim Tech, Surat, Amount: 0.25 lakhs, Role: Pi, Status: Completed

5. Vetting/Review/Approval of Intake structure Satna, Madhya Pradesh, L&T Construction, Amount: 3.30 lakhs, Role: Co-Pi, Status: Completed
6. Analysis of Foundation for Sphere of Unity, Titanium Sphere, CCE R & D, DRDO, Amount: 0.50 lakhs, Role: Pi, Status: Completed
7. Proof Checking of foundation design and drawing BOP tower 1170, Executive Engineer, Border fencing, CPWD Bhuj, Amount: 0.35 lakhs, Role: Pi, Status: Completed.
8. MLRT – Caudan Ramp Mauritius, Consolidation settlement analysis and recommendation, L & T Construction, Amount: 2.50 lakhs, Role: Co-Pi, Status: Completed
9. Consultancy service regarding opinion on Difference between Specific gravity and dry density of soil, Shree Hari Developers, Surat, Amount: 0.50 lakhs, Role: Pi, Status: Completed
10. Consultancy service regarding opinion on Difference between Specific gravity and dry density of soil, Tirth Developers, Surat, Amount: 0.50 lakhs, Role: Pi, Status: Completed

ORGANISER OF TECHNICAL EVENT

1. Joint Organising Secretary of *Indian Geotechnical Conference 2019*, Surat Marriot Hotel, Surat, Organiser: Indian Geotechnical Society and SVNIT Surat, December 2019.
2. Program Coordinator of Short-Term Training Program on *Advances in Geotechnical Engineering AGE 2020*, SVNIT Surat, Total 50 Participants, 19th November 2020 to 23rd November 2020.
3. Program Coordinator of Short-Term Training Program on *Metro Construction and Management MCM 2020*, SVNIT Surat, Total 55 Participants, 14th December 2020 to 18th December 2020.

COMPUTER SKILLS

- AutoCAD
- PLAXIS-2D & 3D
- GeoSlope, Geo5
- MS Office, Origin 9
- MASW analysis

COUNTRIES VISITED

- Paris, France
- Porto, Portugal
- Madrid, Spain

MEMBERSHIP IN PROFESSIONAL SOCIETY

- Member, Indian Geotechnical Society Chennai Chapter (SM 1078)
- Life Member, Indian Geotechnical Society (LM 4934)
- Associate Member, Institute of Engineers (AM 1979488)
- Life Member, Indian Society of Earthquake Technology (LM 1790)

REVIEWER /EDITOR

- Academic Editor – Journal of Engineering Research and Reports
- Reviewer – Geotechnical and Geological Engineering
- Reviewer – Transportation Infrastructure Geotechnology

COURSES DEVELOPED

- CE 455 Introduction to Finite Element Method
- CE 488 Introduction to Earthquake Geotechnical Engineering

COURSES TAUGHT

- AM 702 Finite Element Method (Theory)
- AM 108 Engineering Mechanics (Theory & Lab)
- AM 306 Geotechnical Engineering (Theory & Lab)
- AM 639 Computer Applications in Geotechnical Engineering (Theory)
- CE 717 Construction Material Testing (Lab)

STUDENTS GUIDANCE

Sr. No.	Name	Roll No.	Program	Research Area	Status
1	Kritesh Chouhan	D20CE020	PhD	Large Deformations Analysis	Ongoing
2	Harsh Rai	DS20CE018	PhD	3D Soil Arching	Ongoing

Sr. No.	Name	Roll No.	Program	Research Area	Status
1	Manideep Regunta	P19SM006	MTech – Geotechnical Engineering	BC of Footings	Ongoing
2	AVR Karthik	P19SM007	MTech – Geotechnical Engineering	Slope Stability	Ongoing

PHD OPENING

Enthusiastic and interested students who wants to pursue PhD under the Research area given below can contact me at jtc@amd.svnit.ac.in . The areas of Research are:

- Seismic Hazard Analysis
- Conservation of Heritage Structures
- Use of PIV Technique in Geotechnical Engineering
- Computational Geomechanics (Numerical Modelling in Geotechnical Engineering)
- Constitutive Modelling in Geotechnics
- Physical Modelling in Geotechnical Engineering
- Deep Foundations
- Deep Excavations
- Earthquake Geotechnical Engineering (Dynamic Soil Properties)