

# CURRICULUM VITAE

**Sasanka Borah, Ph.D**

Assistant Professor  
Civil Engineering Department  
Assam Engineering College



## Personal data

Name : Sasanka Borah  
Born : November 6, 1979 in North Lakhimpur, Assam , India  
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## Education

2018 PhD , Gauhati University, Assam, India  
2006 Master of Engineering ( ME), Gauhati University, Assam, India  
2001 Bachelor of Engineering (Civil Engineering), Assam Engineering College, Gauhati University.  
1997 Higher Secondary (12<sup>th</sup> Standard), Assam Higher Secondary Education Council, Assam  
1995 Matriculation (10<sup>th</sup> Standard), High School Leaving Certificate, Assam  
1994 Sangit Prabhakar (Tabla), Prayag Sangit Samiti, Allahabad

## Employment record

since Sep/2011 Assistant Professor, Department of Civil Engineering, Assam Engineering College, Guwahati, Assam, India  
2011 – 2011 Assistant Professor, Department of Civil Engineering, Jorhat Engineering College, Jorhat, Assam, India  
2007 – 2011 Assistant Engineer (Civil), Irrigation Department, Govt. of Assam, India  
2007 – 2007 Assistant Manager(Civil), Namrup Thermal Power Station(NTPS), Assam, India  
2006 – 2007 Consultant and Design Engineer, Experto Geotechnical Consultants and Research Pvt. Ltd., Guwahati, Assam, India.  
2005 – 2006 Laboratory Assistant, Department of Civil Engineering, Assam Engineering College under a DST sponsored project, Microzonation of Guwahati City.

## Membership in Professional Associations:

Description	Organization / Body	ID
Life Member	Indian Geotechnical Society (IGS)	LM 3637
	MIE – Member of The Institution of Engineers (India)	M163279-5
	Assam Science Society	

## Academic and Industry related activities

### ***Training, Project management and industry-related activities***

- 2022 Member, Selection Committee for the empanelment of State Quality Monitors (SQM) in Assam, PWD (Roads).
- 2021 Nodal Officer, for execution and implementation of work as per MoU signed between NHAI and Assam Engineering College.
- 2021 Member, Interview Board for Selection of Project Assistants and Laboratory Helpers on contractual basis for NRIDA funded projects, Rural Connectivity Training and Research Centre (RCTRC) Assam cum Assam Road Research & Training Institute (ARR&TI), PWD (Roads), Fatashil Ambari, Assam
- 2021 Member of a Team of Technical Expert Nominated by National Rural Infrastructure Development Agency (NRIDA), Ministry of Rural Development (MoRD), Government of India for the Inspection of PMGSY projects in the Lakhimpur District of the State of Assam
- 2020 Resource Person – Training of Road Safety for PWD(R), Assam organized by Rural Connectivity Training and Research Centre (RCTRC), PWD(R), Assam.
- 2019 Member, Core Committee, Assam State Disaster Management Authority for preparation of DPR for Landslide Mitigation Project.
- 2018 Member, Technical Committee, Assam State Disaster Management Authority for Shelter Prototype of the “Mother Shelter – A Comprehensive portable Flood relief camp capsule”
- 2017 Nodal Officer-Finance in TEQIP-III Project of MHRD, Govt. of India in Assam Engineering College
- 2017 Resource Person-Short Course on Construction Management for professionals in Assam Engineering College in Collaboration with University of Melbourne, Australia.
- 2017 Resource Person-2nd Annual Workshop on Smart Villages, organized by Assam Engineering College in Collaboration with University of Melbourne, Australia.
- 2017 Member of Central Team, Nominated by Ministry of Rural Development, Government of India for Inspection of PMGSY Roads in the Bameng Assembly Constituency of Arunachal Pradesh.
- 2016 Resource Person-1st 2nd Annual Workshop on Smart Villages, organized by Assam Engineering College in Collaboration with University of Melbourne, Australia.
- 2016 Coordinator-Training Programme on Earthquake Resilient Technology for Engineers, funded by Assam State Disaster Management Authority (ASDMA), Govt. of Assam, India.
- 2016 Member of Govt .of Assam (ASDMA) funded project - "Earthquake Damage and Loss Estimation of Guwahati City for Scenario Earthquakes – a step towards Real- Time Earthquake Damage and Loss Information System” (short ELIAS)" in collaboration with NORSAR (Earthquake Hazard and Risk, Stiftelsen NORSAR, Norway) and supported by IIT Roorkee.
- 2012 Coordinator, State Technical Agency (STA), Assam Engineering College, Pradhan Mantri Gram Sadak Yojana (PMGSY), MoRD, Govt. of India responsible for scrutiny of DPRs related to construction of rural roads under PMGSY for Assam Public Works Roads Department.

## Teaching and guidance

Since 2016 Periodically organizing/assisting in organizing short-term training programmes for in-service and practicing engineers for various government departments in Assam and other states of NE India, sponsored by ASDMA.

Since 2011 Guiding 11 B.E. /B.Tech student groups /15 M.E. students for their theses/dissertations on of topics related to Geotechnical earthquake engineering, site response studies and Geotechnical utilization of waste materials.

## M.E. / M.Tech Students Project Guidance Details

Year	Student Name	Topic
2022	Ankita Karmakar (PG/CE/007)	FEM Analysis of Subsidence due to Tunneling ( <i>Ongoing</i> )
	Pragati Baruah (PG/CE/003)	Evaluation of Triaxial properties of modified soil ( <i>Ongoing</i> )
	Chinmoy Sarma (PG/CE/001)	ANN Based Model for PGA Prediction ( <i>Ongoing</i> )
	Hrishikesh Thakuria (PG/CE/017)	Site Response Analysis ( <i>Ongoing</i> )
2019	Bhargav Borah (Roll – 170620001007)	Software for Optimization and Design of Pile Foundation.
	Abu Waydah Rahman (Roll – 170620001001)	A laboratory study on improvement of clay soil sub-grade using coconut coir fibre.
	Kapil Katuwal (Roll-170620001022)	Slope Stability analysis of a few slopes in and around Guwahati Region using Slope/W Software.
2017	Sujay Choudhury (Roll – PG/CE/15/12)	The effect of Lime-Mud on the Consolidation parameters of soil.
	Pranjal Baishya (Roll – PG/CE/15/14)	A laboratory study on sub-grade characteristics of Soil and Marble-dust composite.
2016	Nayan Jyoti Das (Roll – PG/CE/14/07)	Site Response Analysis using Fast Fourier Transform (FFT).
	Mousumi Deori (Roll – PG/CE/14/16)	Site Response Analysis – A Case Study of Panbazar Area of Guwahati City.
2015	Gopal Banik (Roll –PG/CE/13/12)	Effect of Lime-Mud on CBR property of Soil.
	Sanandam Bordoloi (Roll – 13/13)	Soil-Bio Engineering using Water Hyacinth ( <i>Eichhornia crassipes</i> ) fibre. (Jointly guided with Dr. S. Sreedeeep, IITG).
2014	Bhaskar Baruah (Roll – PG/CE/12/15)	A study on the effects of Solid Waste on the geotechnical properties of soil.
2013	Anup Kaushik Sarma (Roll – PG/CE/11/04)	A Study on the effect of Tunnel Excavation on existing Pile Foundation.

**B.E. / B.Tech Students Project Guidance Details**

Year	Topic
2022	Design and Estimate of Pavement
2021	Effect of Lime Mud in Geotechnical Properties of Soil
2020	Site Response Analysis
2019	Planning, Design and Estimation of Landscape Utility Area near Assam Engineering College
2018	Site Selection using GIS
2017	Evaluation of a commercially available soil stabilizer
2016	Effect of Coir Fibres on CBR Strength of Soil Subgrade
2015	A Study on the Influence of Lime-Mud on Atterberg Limit of soil sample.
2014	Total Station Survey of existing Drainage system of AEC.
2013	Spreadsheet based application for Counterfort retaining wall design
2012	Stability analysis of slope in front of Assam Engineering College Principal's residence

**Research interests**

Geotechnical Earthquake Engineering, Site Amplification, Site Response Analysis, Site-Specific Development of Design Response Spectra, Seismic vulnerability and risk analysis, Sustainable Engineering and Waste Material utilization in Road Sector.

**Research Projects undertaken / in progress**

Year	Name of Project	Funding Agency	Project Amount (Rs.)
<b>As Principal Investigator (PI)</b>			
2018-19	Utilization of Lime-mud as soil stabilizer.	AICTE-RPS-NER	14,50,000/-
<b>As Co-Principal Investigator (Co-PI)</b>			
2021	Feasibility of Plastic Paver Blocks for Rural Roads	National Rural Infrastructure Development Agency, MoRD, Govt. of India	20,11,000/-
2021	Comparative Analysis of use of additives Kiln Dust and Rice Husk to improve performance of earthen shoulders	National Rural Infrastructure Development Agency, MoRD, Govt. of India	16,84,000/-
2019-20	Methodology for prioritization of secondary road network sections for planning of maintenance works.	AICTE / NPIU-TEQIP-III-CRS	19,75,000/-

### Short Term Trainings/Workshops/Conferences etc. Attended

Sl. No	Name of the training	Organization	Location	Duration	Dates / Year
1	AICTE Sponsored Short Term Course on Integrated Solid Waste Management.	Quality Improvement Programme, IIT Guwahati	Guwahati	5 days	9 <sup>th</sup> to 13 <sup>th</sup> January, 2012
2	Ground Improvement Techniques with Reference to North Eastern Region.	Indian Geotechnical Society, Guwahati Chapter (NE) Department of Civil Engineering, Assam Engineering College, Guwahati	Guwahati	1 day	13 <sup>th</sup> October, 2012
3	Hydrology and Hydraulic Engineering	DHI(India) Water & Environment Pvt. Ltd.	Assam Engg. College	2 weeks	4 <sup>th</sup> - 14 <sup>th</sup> June 2013
4	Training Programme on Scrutiny of DPRs of Roads and Bridges for New STAs.	Indian Academy of Highway Engineers, Noida	Noida	5 days	23 <sup>rd</sup> to 27 <sup>th</sup> December, 2013
5	AICTE Sponsored Short Term Course on Geotechnical Engineering Practices and Developments.	Centre for Educational Technology, Quality Improvement Programme, IIT Guwahati	Guwahati	5 days	6 <sup>th</sup> to 10 <sup>th</sup> January, 2014
6	Seismic Vulnerability Assessment of RC Buildings using Software Sap2000 Nonlinear Static-based Procedure.	Department of Earthquakes and the Environment, NORSAR, Kjeller, Norway & Department of Civil Engineering, Assam Engineering College, Guwahati	Guwahati	6 days	2 <sup>nd</sup> to 7 <sup>th</sup> June 2014
7	CSIR-CRRI Sponsored Workshop on New Materials / Technologies in Rural Roads for STAs of North Eastern States.	CSIR-CRRI and PWD, Assam	Guwahati	2 days	2 <sup>nd</sup> to 3 <sup>rd</sup> December, 2014
8	15 <sup>th</sup> Symposium on Earthquake Engineering.	Department of Earthquake Engineering, IIT Roorkee and Indian Society of Earthquake Technology, Roorkee	Roorkee	3 days	11 <sup>th</sup> to 13 <sup>th</sup> December, 2014
9	AICTE Sponsored Short Term Course on Challenges and Recent Advances in Geotechnical Engineering Research and Practices.	Centre for Educational Technology, Quality Improvement Programme, IIT Guwahati	Guwahati	5 days	9 <sup>th</sup> to 13 <sup>th</sup> March, 2015
10	Nonlinear Analysis and Performance Based Design of Multistorey Buildings.	1. Department of Earthquake Engineering, IIT Roorkee 2. Department of Earthquake Hazard & Risk, NORSAR, Norway 3. BMTPC, Ministry of Housing and Urban Poverty Alleviation, GoI, 4. Norwegian Geotechnical Institute, Oslo, Norway	New Delhi	3 days	3 <sup>rd</sup> to 5 <sup>th</sup> December, 2015

Sl. No	Name of the training	Organization	Location	Duration	Dates / Year
11	Cross Cultural Analysis and Capacity Building in Construction Management Practices on Housing and Infrastructure Sectors in Assam and Australia.	University of Melbourne & Assam Engineering College	Guwahati	4 days	13 <sup>th</sup> to 16 <sup>th</sup> December, 2016
12	Visiting Academic Scholar on the Collaborative research on Smart Villages.	University of Melbourne and Assam Engineering College	University of Melbourne, Australia	8 weeks	24 <sup>th</sup> April, 2017 to 18 <sup>th</sup> June, 2017
13	SMART VILLAGES (As Resource Person).	University of Melbourne & Assam Engineering College & Govt. of Assam	Guwahati	4 days	4 <sup>th</sup> to 7 <sup>th</sup> December, 2017
14	TEQIP-III Orientation Workshop on Start-up and Innovation.	NPIU and Centre for Educational Technology, IIT Guwahati	Guwahati	2 days	22 <sup>nd</sup> to 23 <sup>rd</sup> December, 2017
15	Financial Management & Public Financial Management System (PFMS).	National Project Implementation Unit (NPIU) & State Project Implementation Unit (SPIU), a Unit of MHRD in Technical Education Govt. of India	Gauhati University Institute of Science and Technology, Guwahati	2 days	26 <sup>th</sup> to 27 <sup>th</sup> June, 2018
16	Faculty Induction Workshop.	NPIU & IIT Kharagpur	IIT Kharagpur, West Bengal	1 week	3 <sup>rd</sup> to 7 <sup>th</sup> July, 2018
17	3 <sup>rd</sup> Basic course on Remote Sensing and GIS Technology Applications.	North Eastern Space Application Centre, Department of Space, Govt. of India	Umiam, Meghalaya	2 week	16 <sup>th</sup> to 27 <sup>th</sup> July, 2018
18	Training Programme on Landslide Mitigation and Detailed Project Report (DPR) Preparation.	National Disaster Management Agency & IIT Mandi	IIT Mandi, Himachal Pradesh	1 week	27 <sup>th</sup> August 2018 to 1 <sup>st</sup> September, 2018
19	1 <sup>st</sup> International Conference on Smart Villages and Rural Development (COSVARD-2018).	University of Melbourne & Assam Engineering College & Govt. of Assam	Assam Administrative Staff College, Guwahati	3 days	12 <sup>th</sup> to 14 <sup>th</sup> December, 2018
20	Sustainable Materials and Green Buildings (Certificate Course)	SWAYAM-NPTEL Course by Prof. B.Bhattacharjee, IIT Delhi	Online	12 weeks	29 <sup>th</sup> July 2019 to 18 <sup>th</sup> October 2019.
21	Geotechnical Engineering Laboratory. (Certificate Course)	SWAYAM-NPTEL Course by, Prof. J.N.Mandal, IIT Bombay	Online	4 weeks	29 <sup>th</sup> July 2019 to 23 <sup>rd</sup> August 2019
22	Integrated Waste Management for a Smart City. (Certificate Course)	SWAYAM-NPTEL Course by Dr Brajesh Kr. Dubey, IIT Kharagpur	Online	12 weeks	29 <sup>th</sup> July 2019 to 18 <sup>th</sup> Oct. 2019.
23	Quantification of Seismic Hazard and Mitigation of Induced Effects in NER.	Department of Civil Engineering & Centre for Educational Technology (CET)	IIT Guwahati	2 days	08 <sup>th</sup> & 09 <sup>th</sup> November, 2019

Sl. No	Name of the training	Organization	Location	Duration	Dates / Year
24	FDP on 3D Printing.	Department of Mechanical Engineering, AEC and TEQIP-III	Assam Engineering College	1-week	25 <sup>th</sup> to 29 <sup>th</sup> November, 2019
25	FDP on Quality and Quality Engineering.	Department of Mechanical Engineering, AEC and TEQIP-III	Assam Engineering College	1-week	3 <sup>rd</sup> to 7 <sup>th</sup> December, 2019
26	MHRD-TEQIP-III KITE Course on – Internet of Things (IOT).	Parimal and Pramod Chaudhari Centre for Learning and Teaching, IIT Bombay	IIT Bombay	1 week	27 <sup>th</sup> to 31 <sup>st</sup> January, 2020
27	Augmented Reality (AR)/Virtual Reality(VR),	AICTE-ATAL Academy & National Institute of Technology, Warangal	Online	1 week	16 <sup>th</sup> to 20 <sup>th</sup> June, 2020
28	Geosynthetics and Reinforced Soil Structures,	<b>SWAYAM-NPTEL</b> Course	Online	12 weeks	Jan-Apr 2020
29	Geotechnical Engineering – 1	<b>SWAYAM-NPTEL</b> Course	Online	12 weeks	Jan-Apr 2020
30	Geotechnical Engineering – II Foundation Engineering	<b>SWAYAM-NPTEL</b> Course	Online	12 weeks	Jan-Apr 2020
31	Practical Aspects of Geotechnical Investigations from design perspective	Indian Geotechnical Society SC 7 - Student Chapter Activities and Continuing Education	Online	1 day	02 <sup>th</sup> July, 2021
32	Overview on the feasibility of Geophysical soil exploration,	Indian Geotechnical Society SC 7 - Student Chapter Activities and Continuing Education	Online	1 day	10 <sup>th</sup> July, 2021
33	Uses and misuses of SPT	Indian Geotechnical Society SC 7 - Student Chapter Activities and Continuing Education	Online	1 day	16 <sup>th</sup> July, 2021
34	Importance of in-situ testing for the design of deep foundations	Indian Geotechnical Society SC 7 - Student Chapter Activities and Continuing Education	Online	1 day	17 <sup>th</sup> July, 2021
35	Overview of Site Investigation from land to offshore deepwater projects,	Indian Geotechnical Society SC 7 - Student Chapter Activities and Continuing Education	Online	1 day	23 <sup>rd</sup> July, 2021
36	Awareness training in additive manufacturing and its applications,	CDAC, Futureskills Prime, NIELIT, Ministry of Electronics and Information Technology, Govt. of India	Online	2 weeks	3 <sup>rd</sup> to 14 <sup>th</sup> January, 2022

## Publications

### Book Chapters

- Borah, S., Pathak, J., Goswami, D. (2023), “ **Comparative Analysis of SSR and HVSR Method for Site Response Analysis**”, In: Sitharam, T.G., Kolathayar, S., Jakka, R.S., Matsagar, V. (eds) Theory and Practice in Earthquake Engineering and Technology. Springer Tracts in Civil Engineering . Springer, Singapore. [https://doi.org/10.1007/978-981-19-2324-1\\_14](https://doi.org/10.1007/978-981-19-2324-1_14)
- Borah B.J., Borah S. (2022), “ **Genetic Algorithm Based Optimization and Design of Pile Foundation**”. In: Satyanarayana Reddy C.N.V., Muthukkumaran K., Satyam N., Vaidya R. (eds) Ground Characterization and Foundations. Lecture Notes in Civil Engineering, vol 167. Pp.665-676 Springer, Singapore. [https://doi.org/10.1007/978-981-16-3383-6\\_58](https://doi.org/10.1007/978-981-16-3383-6_58)

### Journal/Conference Proceedings

- Deka, B., Deka, G., Borah, S., Das, R. Boruah, A. Saikia, J, Sarma, B & Chah, C.N., “ **A Review of use of Additives like Kiln Dust and Rice Husk for the Improvement of Earthen Shoulder Performance**”, International Conference on New Technologies and Innovation in Rural Roads, National Rural Infrastructure Development Agency, MoRD, 24-26 May, 2022 New Delhi.-
- Borah, B and Borah S. (2020), “ **Genetic Algorithm based optimization and design of pile foundation**”, Indian Geotechnical Conference 2020, 17-19 December, 2020, Andhra University, Visakhapatnam, A.P., India.
- Borah, S., Goswami, D. And Pathak, J. (2020), “ **Planning of Smart Cities and Urban Disaster Mitigation: A Study in Guwahati Region based on site amplification**”, 17<sup>th</sup> World Conference in Earthquake Engineering, Japan. (Abstract only)
- Borah, S. and Doloi, H. (2018), “ **Sustainable Construction in the Context of Smart Villages in Assam**”, Zero Energy Mass Custom Home (ZEMCH) 2018 International Conference, University of Melbourne, Australia, 29<sup>th</sup> January – 1<sup>st</sup> February, 2018.
- Choudhury, S., Baishya, P. and Borah, S. (2017), “ **Effect of Lime-Mud on Consolidation Characteristics of Soil**”, Indian Geotechnical Conference 2017 GeoNEst, 14-16 December, 2017, IIT Guwahati, India.
- Borah, S., Goswami, D. And Pathak, J. (2016), “ **Site Response in Guwahati Region using Standard Spectral Ratio**”, International Journal of Research in Engineering and Tehnology, Vol. 5, No 4, pp.77-81.
- Borah, S., Goswami, D. And Pathak, J. (2016), “ **Site Response Analysis : Guwahati City and CMP 2025**”, 6ICRAGEE, 6<sup>th</sup> International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, August 1 – 6, 2016, IIT Roorkee Extension Centre, 20 Knowledge Park II, Greater Noida, India.
- Borah, S., Goswami, D. And Pathak, J. (2016), “ **Site Amplification: A study in Guwahati Region**”, 16<sup>th</sup> World Conference in Earthquake Engineering, Chile. (Abstract only)
- Das, N.J., Deori, M. & Borah, S. (2016), “ **Site Response Analysis: A case study of Guwahati city**”, 1<sup>st</sup> International Conference on Civil Engineering for Sustainable Development-Opportunities and Challenges, 19-21 Dec, 2016, Assam Engineering College, Guwahati, Assam.
- Borah, S., Goswami, G, & Pathak, J. (2016), “ **Site Response Studies for Sustainable Urban Planning - A Case Study of the Western Guwahati Region**”, 1<sup>st</sup> International Conference on Civil Engineering for Sustainable Development-Opportunities and Challenges, 19-21 Dec, 2016, Assam Engineering College, Guwahati, Assam.



- Bordoloi, S., Yamsani, S.K., Garg, A. & Borah, S (2015), “**Study on the efficacy of harmful weed species *Eichhornia crassipes* for soil reinforcement**”, Ecological Engineering, Vol 85, pp. 218-222. <https://doi.org/10.1016/j.ecoleng.2015.09.082>
- Bordoloi, S., Yamsani, S.K., Sreedeeep, S. & Borah, S. (2015), “**Effect of compaction state on strength characteristics of fibre reinforced soil**”, 5<sup>th</sup> Indian Young Geotechnical Engineers Conference (5IYGEC), 14-15 March, 2015, Vadodara.
- Baruah, B & Borah, S. (2015), “**Effect of Lime-mud on undrained shear strength of soil**” 5<sup>th</sup> Indian Young Geotechnical Engineers Conference (5IYGEC), 14-15 March, 2015, Vadodara.
- Wahab, S.A., Sharma, A.K., Kalita, M. & Borah, S. (2015), “**Ground Subsidence due to Tunnelling and Effects on Pile Foundations**”, Journal of Applied and Fundamental Sciences, Vol 1(2), pp. 237-244.

**\*\*\*\*\*PLEASE UPHOLD DIGNITY OF LABOUR\*\*\*\*\***

**\*\*PLANT TREES, SUSTAIN LIFE\*\***