

# Athira S

Phone:

+91 8281943340

Email:

athusatish@gmail.com

LinkedIn:

www.linkedin.com/in/athira-s-aa7886191

Address:

A-304, Padmashree apartment, 100 ft road, Vasai west, Mumbai- 401202



## Summary

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- A motivated and results-driven PhD candidate in Geotechnical Engineering, I specialize in the innovative use of waste material in construction and environmental sustainability. Proficient in numerical modeling and design software, including PLAXIS, ABAQUS, SLIDE, IITPAVE and AutoCAD.
- Possess extensive hands-on experience in operating advanced laboratory equipment, demonstrating strong technical skills and a deep understanding of experimental design and analysis.
- I am eager to leverage my expertise to make a meaningful impact in field of work. Seeking a role as a **Geotechnical Engineer** to apply analytical and technical skills in infrastructure design and development

## Education

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### **Ph.D. in Civil Engineering**

National Institute of Technology Karnataka, Surathkal

October 2020 – November 2025

Research Title: Experimental Study on Utilization of Iron Ore Tailing as Structural Fill Material

Guide: Dr. Sridhar G

Research focused on the sustainable utilization of iron ore waste as structural fill in retaining structures and pavement layers. Acquired in-depth experience in experimental and large-scale pullout testing, to evaluate geotechnical performance. Employed ABAQUS for numerical modeling to understand deformation mechanisms in retaining wall.

### **M-Tech in Geotechnical Engineering**

College of Engineering, Trivandrum, Kerala

August 2018 – August 2020

Thesis: Modification of Coir Fiber in Durability and Shear Strength Parameters in Flyash Soil Mixture

Guide: Dr. Manju G S

GPA: 9.48

### **B-Tech in Civil Engineering**

Federal Institute of Science and Technology, Angamaly, Kerala

July 2013 – August 2017

GPA: 8.26

## Professional Experience

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### Assistant Professor – Civil Engineering

Vidyavardhini's College of Engineering & Technology, Vasai west, Mumbai

July 9, 2025 - Present

- Teaching undergraduate courses such as Advanced concrete technology, Solid hazardous and waste management
- Guiding student projects, seminars, and mentoring students in academic and career development.

### Internship

Maccaferri Environmental Solutions Pvt Ltd., Chennai, Tamil Nadu

July 10, 2019 – July 31, 2019

- Gained hands-on experience in the design of gabion and reinforced earth retaining walls using **MacStars W 4.0** with Maccaferri products such as Terramesh and Green Terramesh. Performed slope stability analysis using **Slide 5.0** software for conditions with and without soil nailing reinforcement.

## Research Experience

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### PhD Researcher

National Institute of Technology Karnataka, Surathkal

October 2020 – November 2025

- Conducted advanced laboratory experiments to test the soil properties.
- Published paper in peer-reviewed journal and presented findings at national and international conferences.
- Collaborated with interdisciplinary teams to develop sustainable engineering solutions.
- Assisted in lab classes for courses such as Civil Engineering Materials lab, Highway Materials and Concrete Testing Lab.

## Important duties handled

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- Conducted consultancy work to evaluate the slope stability check for a newly constructed residential building, utilizing **Plaxis 2D** software for analysis and preparing the required reports.
- Prepared borehole data reports using **ES Log software** by inputting depth and SPT values to generate detailed drawings and profiles related to borehole investigations
- **Session Co-ordinator**, for technical sessions at Sustainable Infrastructure: Innovation Opportunities and Challenges, An International conference organized by NITK, Surathkal.

## Publications

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### Journal Articles

- Athira, S., Sridhar, G. (2025). "Utilization of Iron Ore Tailing in Controlled Low-Strength Material- Development and Characterization." *Int. J. of Geosynth. and Ground Eng.* **11**, 67. <https://doi.org/10.1007/s40891-025-00673-4>
- Athira, S., Sridhar, G. (2025). "Comprehensive Evaluation of Iron Ore Tailing and Cement Treated Lithomargic Soil for Pavement Application." *Int. J. of Geosynth. and Ground Eng.*, **11**, 13. <https://doi.org/10.1007/s40891-025-00626-x>
- Athira, S., Sridhar, G. and Packiam, S. (2024). "Comprehensive Assessment on Utilization of Iron Ore Tailing as Backfill Material in Mechanically Stabilized Earth Wall." *Indian Geotech J.*, **55**, 636–651. <https://doi.org/10.1007/s40098-024-01001-9>

### Conference Proceedings

- Athira, S., and Sridhar Gangaputhiran. "A Critical Analysis of Curve Fitting Procedures Used in Evaluating Co-Efficient of Consolidation of Soils." In *Recent Advances in Geotechnical Engineering, Proceedings of Women in Indian Geotechnical Conference 2024 Volume 2*, pp. 69-78. Singapore: Springer Nature Singapore, 2025. DOI: [10.1007/978-981-96-2038-8](https://doi.org/10.1007/978-981-96-2038-8) (Scopus Indexed)
- Athira, S., and G. S. Manju. "Effect of Modification on Coir Fiber in Durability and Shear Parameters in Fly ash Soil Mixture." In *Ground Improvement and Reinforced Soil Structures: Proceedings of Indian Geotechnical Conference 2020 Volume 2*, pp. 155-166. Springer Singapore, 2022. DOI: <https://doi.org/10.1007/978-981-16-1831-4> **14** (Scopus Indexed)
- Athira, S., and Sridhar Gangaputhiran. "A Critical Review on Potential Use of Iron Ore Tailings as Structural Fill Material." In *Soil Behavior and Characterization of Geomaterials: Proceedings of Indian Geotechnical Conference 2021 Volume 1*, pp. 69-78. Singapore: Springer Nature Singapore, 2022. DOI: <https://doi.org/10.1007/978-981-19-6513-5> **6** (Scopus Indexed)
- Athira, S., and G. S. Manju. "Durability and shear strength analysis of modified coir fiber in fly ash clay mixture." *Proceedings of the National Conference on Resilient Infrastructure: NCRI 2020*

## Skills

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- **Technical:** Soil testing, lab instrumentation, finite element analysis, geotechnical software: **PLAXIS 2D, Abaqus, SLIDE, IITPAVE, AutoCAD**
- **Languages:** English, Hindi, Malayalam, Tamil
- **Soft Skills:** Project management, team collaboration, technical writing, leadership, communication
- **Miscellaneous:** Academic research, Badminton, Typesetting and publishing

## Workshop and Seminar

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- Short Course on Soil Constitutive Models, Indian Institute of Science (IISc) Bangalore | May 15 -19, 2023
- Karnataka Geotechnical Fusion- 2023 (One day Conference) by Indian Geotechnical Society | November 4, 2023
- International workshop on Case histories in Geotechnical and Geological Engineering-Theory to Practice | March 25 - 26, 2021
- International Virtual Short-Term Course on Futuristic Prospects of Geoenvironmental and Geotechnical Issues of Coal Mine Overburden and Mine Tailings | March 15 -18, 2021

## Awards and Professional membership

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- **AICTE-Fellowship**, For Qualifying GATE (2018)
- **MHRD-Fellowship**, For pursuing Ph.D. (2020)
- Student Member of **American Society of Civil Engineers**

## Reference

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### **Prof. Robinson R G**

Professor  
Indian Institute of Technology Madras,  
Chennai, Tamil Nadu, India  
E-mail: [robinson@iitm.ac.in](mailto:robinson@iitm.ac.in)

### **Dr. Sridhar G**

Assistant Professor  
National Institute of Technology Karnataka,  
Surathkal, India.  
E-mail: [sridhar@nitk.edu.in](mailto:sridhar@nitk.edu.in)

## Declaration

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I hereby declare that the above furnished information is true to the best of my knowledge and belief.

-Athira S