

# ADVANCES IN GEOTECHNICAL ENGINEERING : INFRASTRUCTURE AND TECHNOLOGY

AN ASCE GI-IGS ORGANIZED US-INDIA WORKSHOP AT

## GEOTECHNICAL FRONTIERS 2025

Room 311, Belknap Campus at the Speed School of Engineering, Vogt Building  
University of Louisville, Kentucky, USA

March 2, 2025

### About the Workshop

The one-day workshop titled "Advances in Geotechnical Engineering: Infrastructure and Technology" is co-locating with Geo-Frontiers 2025, scheduled to be held in Louisville, Kentucky. This workshop aims to bring together leading experts from academia, industry, and government agencies to discuss recent advancements in geotechnical engineering and their applications across various infrastructure sectors.



**GEOTECHNICAL**  
Frontiers

# OBJECTIVES

- Highlight the latest innovations and technological advancements in geotechnical engineering.
- Facilitate knowledge transfer and exchange between researchers, practitioners, and policymakers from India and the US.
- Foster collaborative research and industry-academia partnerships between Indian and US institutions.
- Address current challenges and explore solutions in various segments of civil infrastructure.
- Discuss future trends and directions in geotechnical engineering, leveraging insights from both Indian and US perspectives.

# WORKSHOP TOPICS

## Water Infrastructure:

- ▶ Geotechnical challenges in dam and reservoir construction.
- ▶ Coastal and marine geotechnics for ports and harbours.
- ▶ Flood control systems and levee engineering.

## Digital Twins:

- ▶ Implementation of digital twin technology in geotechnical engineering.
- ▶ Predictive maintenance and real-time monitoring of infrastructure.
- ▶ Case studies on digital twins in civil infrastructure projects.

## Energy Infrastructure:

- ▶ Geotechnical solutions for renewable energy projects (wind, solar, geothermal).
- ▶ Foundations for oil and gas infrastructure.
- ▶ Site selection and risk assessment for nuclear facilities

## Transportation Infrastructure:

- ▶ Geotechnical aspects of highway and roadway design.
- ▶ Bridge and tunnel foundation engineering.
- ▶ Railway geotechnics and track bed stability.

## Unmanned Aerial Vehicles (UAVs):

- ▶ UAV applications in geotechnical site investigations and monitoring.
- ▶ Integration of UAV data with geotechnical modeling.
- ▶ Advances in UAV technology for infrastructure inspection.

### FOR MORE DETAILS, PLEASE CONTACT

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**You are cordially invited to submit a topic to present at the workshop.**