

# BRIDGING THE GAP IN GEOTECHNICAL ENGINEERING: HOW GLOBAL FAILURES ACCELERATED TECHNICAL EXPERTISE

Speaker

**Prof. Fernando A. M. Marinho**

University of São Paulo, Brazil



## Abstract

This lecture discusses how major geotechnical failures, particularly in the mining sector, have accelerated technical reflection, regulatory changes, governance practices, and engineering education. Rather than treating failures only as isolated events, the presentation explores how they expose gaps between available knowledge, professional competence, design practice, regulation, and teaching. Special attention is given to tailings dams, risk governance, credible failure modes, monitoring, and the need to transform technical knowledge into engineering judgment. The central argument is that failures do not create knowledge; they reveal whether knowledge has become competence.

## Biography

Fernando A. M. Marinho is Associate Professor at the University of São Paulo, Brazil, working at the Polytechnic School and the Institute of Geosciences. He holds a PhD from Imperial College London. His research focuses on unsaturated soils, soil-atmosphere interaction, geotechnical testing, slope stability, tailings, and risk assessment in geotechnical engineering. He has also been involved in technical reviews, research projects, and educational initiatives related to geotechnical failures, tailings dams, and the transfer of knowledge into professional practice.



**29 May 2026**  
**Friday**



**2:30pm- 3:30pm**



**Room 5566 (Lift 27/28),  
Academic Building,  
HKUST**

## Enquiry:

Ms. Crystal Lau  
cecystal@ust.hk