OCTOBER 6TH, 2025

9:30 AM – 5:30 PM

📍 **TAJ CIDADE DE GOA HORIZON, GOA**

75 SEATS ONLY

SUNNY SANKLA GROUP

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GEOTECH ASIA 2025
7-10 OCT | GOA

1ST GEOTECH ASIA

Pre-conference Workshop on

RISK ASSESSMENT AND MACHINE LEARNING

From the use of Bayesian Geostatistics for Local Site Characterization, to the use of Bayesian Risk Networks for the Simulation of Social, Economic, and Environmental Transboundary Regional Risk Scenarios

Resource Person
DR. ZENON MEDINA-CETINA

Resource Person
ER. RONEET DAS

SCAN/CLICK QR TO REGISTER

REG FEE FREE

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RESOURCE PERSONS

Dr. Zenon Medina-Cetina is an Associate Professor at Texas A&M University and a Research Fellow at the Mosbacher Institute. He previously held research positions in Norway at NGI, the International Centre for Geohazards, and SIMULA. An expert in probabilistic risk assessment, he leads the Stochastic Geomechanics Laboratory, advising numerous graduate students. He teaches undergraduate and graduate courses in geotechnical and stochastic mechanics. His research focuses on probabilistic site characterization, foundation reliability, and landslide risk. A Fellow of the Society for Underwater Technology and Fulbright Scholar, he serves in leadership roles within ASCE-GI and was appointed to the National Academies' geotechnical committee.

Er. Roneet Das is a Senior Geotechnical Engineer at NGI-Houston with over a decade of experience in offshore and onshore infrastructure. He earned his master's from Texas A&M under Dr. Zenon Medina-Cetina, focusing on Bayesian slope stability. His expertise includes soil–structure interaction, cyclic loading, geohazard assessment, and advanced lab testing for global offshore projects. He applies probabilistic methods to pipe–soil interaction and slope analysis, co-authoring an API report and presenting at ISFOG and OTC. Das serves as Vice-Chair of the SUT-YP board and supports its mentoring program. His interests include renewable energy, sustainable business, and emerging technologies.

AUDIENCE

This 7 hour short-course is designed for Geo-professionals with little or no background in Bayesian Statistics nor Bayesian Risk Networks, who have the motivation to use the most advanced theory, methods, and computation, to significantly improve their day-to-day decision-making needed in practical Geo- scientific, engineering, and technological local to regional safety applications.

COURSE OUTLINE

PART I:

- INTRODUCTION TO PROBABILISTIC INFERENCE
- GEOSTATISTICS
- MOTIVATION TO USE BAYESIAN STATISTICS
- APPLICATION TO LANDSLIDE MODELS CALIBRATION
- APPLICATION TO GEOPHYSICAL INVERSION
- APPLICATION TO PIPELINE ROUTING
- APPLICATION TO INTEGRATED SITE CHARACTERIZATION: GEOPHYSICS, GEOLOGY, GEOMATICS, AND GEOTECHNICAL ENGINEERING

PART II:

- MOTIVATION TOWARDS A RISK-BASED DESIGN
- RISK FRAMEWORK
- INTRODUCTION TO BAYESIAN RISK NETWORKS
- RISK ASSESSMENT AND MANAGEMENT METHODS
- RISK ASSESSMENT AND MANAGEMENT DATA TECHNOLOGY
- APPLICATION TO ENVIRONMENTAL DRILLING SYSTEMS
- APPLICATION TO THE INTEGRATION OF MULTIPLE TECHNOLOGIES FOR THE MAPPING OF REGIONAL LANDSLIDES RISK ASSESSMENT
- APPLICATION TO MAPPING OF REGIONAL RISK DUE TO AQUIFER CONTAMINATION DUE TO SHALE GAS DRILLING
- APPLICATIONS TO TRANSBOUNDARY REGIONAL RISK ASSESSMENT
- SIMULATION OF PROBABILISTIC REGIONAL RISK SCENARIOS USING BAYESIAN RISK NETWORKS