

# Geotechnical Earthquake Risk Modeller

## Liquefaction and Landslides

The Global Earthquake Model (GEM) is a global collaborative effort that brings together state-of-the-art science, national, regional, and international organisations and individuals aimed at the development of open tools, datasets and best practices for calculating and communicating earthquake hazard and risk worldwide.

GEM is expanding its work on earthquake-triggered hazards and their integration into regional and global seismic risk assessment. In addition to ground shaking, earthquakes can trigger phenomena such as liquefaction and landslides, which can cause significant damage to buildings, infrastructure and communities. GEM is developing methodologies and tools to model these hazards at regional scale, quantify their impacts, and incorporate them into probabilistic seismic risk assessment and the OpenQuake-engine. These developments will contribute to GEM's ongoing Global Seismic Risk Model and support more comprehensive multi-hazard earthquake risk assessments worldwide.

We are looking for a geotechnical engineer/researcher with expertise in one or more of the following disciplines: geotechnical earthquake engineering, liquefaction, earthquake-induced landslides, seismic hazard and risk assessment, and/or earthquake loss modelling. The successful candidate will join the GEM Secretariat science team in Pavia (Italy), although remote working may also be a possibility.

**This position will have an initial period of 2 years, with the possibility of becoming a permanent position. The primary duties for this position are:**

- Development and implementation of methodologies for regional liquefaction and earthquake-induced landslide hazard assessment.
- Integration of earthquake-triggered hazard and impact assessment methodologies into the OpenQuake-engine.
- Integration of liquefaction and landslide impacts into probabilistic seismic risk assessment.
- Development, testing and validation of regional-scale models using available observations, geotechnical information, Earth observation data and impact datasets.
- Contribution to the development and improvement of GEM's Global Seismic Risk Model, including the representation of earthquake-triggered hazards and their impacts.
- Liaison with GEM partners and contribution to research projects.

**The ideal candidate has:**

- A strong background in geotechnical engineering, earthquake engineering or a related discipline.
- Experience in liquefaction and/or earthquake-induced landslide hazard assessment.
- Experience in the assessment of damage and losses associated of earthquake-related hazards.
- Experience with regional-scale geospatial modelling and GIS.
- Strong quantitative and statistical skills.
- Knowledge of scientific programming languages, particularly Python.
- Experience with OpenQuake, machine learning or large-scale geospatial datasets.
- Proven ability to work in a multidisciplinary and international team.
- Good oral and written communication skills.
- Availability to travel internationally.
- Passion for GEM's humanitarian mission to reduce loss of lives and livelihoods due to earthquakes.

English is the working language at GEM; knowledge of a second language can be an advantage but is not required. We look forward to hearing from you. Please apply to [vitor.silva@globalquakemodel.org](mailto:vitor.silva@globalquakemodel.org) with a cover letter/email explaining why you would be a good fit for the position, your resume/CV, and your timeline of availability. The selection procedure will continue until a suitable candidate has been identified.