IAESTE AUSTRIA

INTERNSHIP OFFER

Ref. No. AT-2024-2015GR

Internship Host Information

Internship Host: TUG Institute of Rock Mechanics and Tunnelling

Rechbauerstrasse 12

8010 Graz
Austria

Website:

Location of placement: Graz
Nearest airport: GRZ, VIE
Working hours per week: 40.0
Working hours per day: 8.0

Number of employees: NA
Business or products:

Student Required

General Discipline: CIVIL ENGINEERING, GEOLOGY AND MINING

Field of Study: Geotechnical and Geoenvironmental Engineering.; .Mining and Mineral Engineering.; .Geological/Geophysical Engineering.

Completed years of study: 3

Student status requirements: not required

Language required: English Good (B1, B2)

Required Qualifications and Skills:

Machine Learning

Other requirements:

Scientific writing skills; data organization/structuring skills; attention to detail

We are looking for a suitable candidate in one of our two available projects:
Project 1: Knowledge on and/or experience with:
· Python coding language (Pandas, NumPy, Scikit-Learn modules)
· Geo-data handling
· Literature research
Enthusiasm for:
· Data Science
· Machine Learning
· Coding
· Digitalisation in civil engineering
Project 2: Knowledge on and/or experience with numerical software in geotechnical engineering, e.g.,
PLAXIS and/or Ithasca suite (3DEC, PFC) and/or Rocscience suite (RS2)

Internship Offered

We are looking for a suitable candidate in one of our two available projects:
Project 1: Assistance in the MLGT (machine learning in geotechnics workgroup), which explores possible applications of machine learning for geotechnical and engineering geological problems. Goals

include increasing the overall utilization of geo-data, developing workflows that permit efficient data-handling and using machine learning as decision support tools.

Current fields of research include: Improving geological predictions in tunnelling, Anomaly detection in geotechnical datasets, Synthetic data generation, Measurement while drilling data analysis, Digitalisation of archived geotechnical reports.
The trainee will actively contribute to one or more of the above mentioned research fields through coding , discussions, report writing and literature research.
Project 2: In this research project, we work on the numerical simulation of transitional stratum termed Hard Soil/Soft Rock (HSSR). Since it is geomechanically challenging, it is also difficult to model with existing numerical methods. The goal is to use in-situ as well as laboratory data to accurately model a closely monitored and studied lithology from a tunnelling site in Austria and thus, participate in a detailed material characterization of an often overlooked geology.

Number of weeks offered: 12 - 24

Within the months: 01-OCT-2024 - 30-JUN-2025

Or within: -

Company closed within: -

Latest possible start date:

Working environment: Research and development

Gross pay: 1200 EUR / Month

Deduction to be expected: ~20%

Payment method / time of first payment: Bank Transfer /

Accommodation

Canteen at work: No

Expected type of accommodation: Student dormitory

Accommodation will be arranged by: Trainee with the help of IAESTE

Estimated cost of lodging: 350 EUR / Month

Estimated cost of living incl. lodging: 700 EUR / Month

Additional Information

We expect an internship in return from the country of the selected student.

Nomination Information

Deadline for nomination: 26-MAY-2024

Date: 06-MAY-2024 *On behalf of receiving country:* IAESTE Austria