

ABU YOUSUF FARHAD

Educational qualifications:

❖ Université Grenoble Alpes

Master of Science in Geomechanics, civil engineering and risks

(Results: 14.52/20.00)

Academic focus:

Mechanics of materials, geomechanics, energy geo-structure, numerical modeling, finite element modeling, district heating, risk assessment-structure.

Research experience:

Internship at 3SR Laboratory

Enhancing thermal energy storage through tunnels using Phase Change Materials (Results :16.30/20.00)

Research objective:

- ✓ Investigated shallow geothermal energy systems through energy geostructures using advanced numerical simulations performed in COMSOL Multiphysics.
- ✓ Employed a model validation approach based on field experimental data from the Turin Metro Line 1 energy tunnel, aiming to enhance subsurface energy storage efficiency through tunnel-based systems.
- ✓ Proposed a novel application of phase change materials (PCMs) specifically paraffin wax—embedded within concrete tunnel linings, demonstrating a significant reduction in heat loss caused by internal airflow.

❖ Islamic University of Technology (IUT)

Bachelor of Science in Civil Engineering

(Results: 3.61/4.00)

Academic focus:

Material science, soil mechanics, water treatment analysis, environmental engineering, fluid mechanics, transportation, statistics, Environmental impact assessment (EIA).

Research work:

My undergraduate thesis focused on the Environmental Impact Assessment (EIA) of a tannery in Bangladesh, utilizing existing site data to develop empirical equations for evaluating dermal exposure risks from tannery wastewater. MATLAB and Microsoft Excel were employed for computational and analytical analyses, revealing that children are the most vulnerable group due to potential long-term health risks from contaminated water sources. The research was evaluated with a score of 4.00 out of 4.00.

Laboratory experience:

Compression/tensile test of concrete cylinder.

Yield test of rebar.

X-ray tomography of concrete sample.

Field dry density (FDD) Test, SPT.

Dynamic pile loading test.

Numerical Simulation-COMSOL Multiphysics.

1 γ 2 ε Test for shear resistance.

Image Analyses from x-ray tomography using Fiji.

Mix design of: Concrete/Asphalt.

Digital concrete test hammer.

Professional Experience:

Assistant Engineer (Civil) at Pubali Bank PLC.

Junior Engineer at Oriental Consultant Global Ltd. 

Skills:

Modeling & Simulation: COMSOL Multiphysics AutoCAD Cube Dynasim ArcGIS
Python (basic).

Languages:

English (C1) French (A1) Bengali (native)

Projects & Training:

European Synchrotron Radiation Facility (ESRF), Grenoble, France (Laboratory visit).
Environmental Treatment Plant, AKH Knitting & Dyeing Ltd., Dhaka – 2015 (Industrial visit).
Steel Manufacturing & Prefabricated Structures, Sarker Steel Ltd., Dhaka – 2014 (Industrial visit).

Interest:

Cycling Running Cuisine Cinema Swimming