SHAHBAZ AHMAD

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Education

Texas A&M University, College Station TX **Expected Graduation-May 2020**
Master of Science in Civil Engineering August 2018-Present
Related Courses: Geo Mechanics, Physical and Engineering properties of Soil, Geotechnical Site Investigation, Slope Stability & Retaining Walls, Foundation Engineering, CVEN Application of GIS, Numerical Methods in Geotechnical Engineering

Aligarh Muslim University, Aligarh, India
Bachelor of Technology in Civil Engineering July 2013-June 2017
Related Courses: Structural Mechanics, Geo Engineering of Rock & Rock Masses, Design of RC Structures, Steel Structure

Technical Skills

- **Engineering Relevance:** GeoStudio, Slide, gINT, APILE, SHAFT, LPILE, Settle 3D, Auto CAD, Arc GIS, PDA-S, DigiPro2
- **Tools:** MATLAB, Inkscape, MS Office
- **Simulation Software:** COMSOL Multiphysics, Crunch Flow, ABAQUS, ANSYS, Lab View

Thesis

Multiscale Modeling for Thermal-Mechanical-Chemical CO_2-Fluid-Rock Interaction January 2019- Present

- Characterized the microstructural evolution and Chemo-Mechanical interaction of Shales with CO_2 rich brine using Nano-Indentation, Energy Dispersive X-Ray Spectrometry (EDX) and monitored spatial distribution of constituents using Micro-CT
- Utilized Reactive Transport Modeling for Thermal–Mechanical–Chemical processes in the CO_2 Fluid Rock interaction

Work Experience

- **Student Assistant, Department of Nuclear Engineering, TAMU, College Station** March 2019- Present
  - Assist the group in carrying out Experimental and Numerical Analysis of Heat Flow problems in a Nuclear Reactor
  - Performed Data Acquisition and ran digital Particle Image Velocimetry (PIV) and planar Laser Induced Fluorescence (LIF) to grab images of the scattering particles.

- **Geotechnical Engineering Intern, Terracon Inc., Houston** May 2019- August 2019
  - Assisted the Energy & Oil group in the overall preparation of Geotechnical Engineering Report
  - Performed settlement analysis on Settle 3D for Ground Storage Tank and ran Analysis for Axial & Laterally loaded Piles
  - Carried out Slope Stability Analysis for Embankment and assisted in Inclinometer data interpretation using DigiPro2
  - Assigned lab tests, Generate final boring logs and analytical geotechnical models
  - Managed and Performed Geotechnical field exploration (SPT, CPT rig practices) as per requirement and ASTM standards
  - Geotechnical calculations for deep and shallow foundations, soil PVR calculations

- **Engineer- Civil, KEC International Ltd., Mumbai (India)** July 2017- June 2018
  - Assisted in the execution of 400KV Transmission Line (on-site) and Coordinated closely with the Quality control team
  - Supervised the testing of Transmission Towers, Design of Foundations and Structural Elements for Transmission Towers
  - Assisted a team of management consultants in preparation, reviewing and submission of Tender

- **Undergraduate Intern, University of Kiel, Germany** June 2016-August 2016
  - Developed a large-scale setup for measuring thermal conductivity for energy transportation in underground power cables
  - Developed a new backfill material and increased the efficiency of the system by 89%
  - Worked with the research group in validating and analyzing the developed numerical model using COMSOL Multiphysics

- **Undergraduate Intern, Indian Institute of Technology, New Delhi (India)** June 2015-July 2015
  - Assisted the research group in data collection for Ambient Air Sampling as well as Source and Health Monitoring
  - Prepared and analyzed a stochastic model for the experimental data

Selected Publications

- **Ahmad S***., Rizvi Z., Wuttke F., (2019) "Experimental and Numerical studies for Advanced Thermal Conductivity around Embedded High Voltage Cables," MaterialsToday: Proceedings, Volume 17, Part 1, 2019, Pages 85-95
- **Ahmad S*.,** Rizvi Z., Wuttke F., (2019) "Lattice Element Method with refined beam theory for failure in cemented granular media," EMI- CALTECH
- Rizvi, Z. H., **Ahmad, S***., Sattari, A. S., Furtner, P., Wuttke, F., (2019) "Dynamic lattice element modelling of cemented Geomaterials" International Association for Computer Methods and Advances in Geomechanics, Gandhi Nagar, India.
- Haroon A., **Ahmad S*.,** Hussain A., (2017) "CFD Prediction of Loss Coefficient in Straight Pipes" Development of Water Resources in India, Springer ISBN: 978-3-319-55124-1

Leadership Experience & Awards

- Admin officer- Geo Institute ASCE Jan 2019- Present
- Ballouz Fellowship in Geotechnical Engineering (Texas A & M University, College Station) 2018-2019