A. BIOGRAPHICAL INFORMATION

Ehsan Ghazanfari, Ph.D., P.E.

Assistant Professor

Civil & Environmental Engineering Department, University of Vermont

33 Colchester Ave., Burlington, VT, 05405

Phone: (802) 656-1770

Email Address: Ehsan.Ghazanfari@uvm.edu

A1. EDUCATION

Ph.D.	Lehigh University, Bethlehem, PA (Sept. 2013) Dissertation: Development of a Mathematical Model for Electrically Assisted Oil Transport in Porous Media Advisor: Professor Sibel Pamukcu	2009-2013	Civil Eng. (Geotech.)
M.Sc.	Lehigh University, Bethlehem, PA (Jan. 2013) Advisor: Professor Sibel Pamukcu	2009-2013	Civil Eng. (Geotech.)
M.Sc.	Iran University of Science & Tech. (IUST), (March 2004) Thesis: Parametric Study of Carbonate Sands under Stress Advisor: Professor Hossein Salehzadeh	2001-2004	Civil Eng. (Geotech)
B.Sc.	K.N.Toosi University of Technology, Iran (Sept. 1997)	1997-2001	Civil Eng.

A2. EMPLOYMENT

Assistant Professor	Aug. 2013 – Present	University of Vermont
Adjunct Instructor	May 2013 – Aug. 2013	Lehigh University
Research Assistant	Sept. 2009 – May 2013	Lehigh University
Teaching Assistant	Sept. 2010 – May 2013	Lehigh University
Geotechnical Engineer	Sept. 2002- July 2009	Aksco Eng. Inc., Tehran, Iran
Research Assistant	Sept. 2001- Mar. 2004	IUST, Iran

B. RESEARCH INTERESTS

- Development of shallow and deep geothermal systems
- Geo-mechanical and environmental aspects of shale energy and geological carbon sequestration
- Environmental impacts of hydraulic fracturing used in different energy technologies
- Induced seismicity associated with energy technologies
- Monitoring and health assessment of civil infrastructure using wireless sensor technology
- Intelligent compaction
- Characterization of extraterrestrial regolith

C. PUBLICATIONS

Underline indicates my graduate student; Double underline indicates my undergraduate student.

C1. PEER REVIEWED JOURNAL PAPERS

1. Kamali-Asl, A., **Ghazanfari, E.**, Perdrial, N., Bredice, N. (2018). Experimental study of fracture response in granite specimens subjected to hydrothermal conditions relevant for enhanced geothermal systems. Geothermics 72 (2018) 205–224

2. Latifi, N., Vahedifard, F., **Ghazanfari, E.**, Horpibulsuk, S., Marto, A., Williams, J. (2018). "Sustainable Usage of Calcium Carbide Residue for Stabilization of Clays". *ASCE Journal of Geomechanics*, Accepted for publication.

3. Peraki, M., **Ghazanfari, E.**, Pinder, G.F., (2018). "Investigation of the feasibility of crude oil viscosity change under applied electrical field in porous media and its significance for transport phenomena". *Porous Media*, Accepted for publication.

4. Latifi, N., Vahedifard, F., **Ghazanfari, E.**, Rashid, A. S. (2018). "Sustainable Improvement of Clays Using Low-carbon Non-traditional Additive". *ASCE Journal of Materials in Civil Engineering*, Accepted for publication.

5. Caulk, R., **Ghazanfari, E.**, Perdrial, J., Perdrial, N. (2016). "Experimental Investigation of Fracture Aperture and Permeability Change within Enhanced Geothermal Systems". *Geothermics*, Vol. 62, pp 12-21 (2016)

6. Villamor, R., **Ghazanfari, E.**, Asanza, E. (2016) "Geomechanical Characterization of Marcellus Shale". *Rock Mechanics and Rock Engineering*, Vol. 49, Issue 9, pp 3403–3424

7. Caulk, R., **Ghazanfari, E.**, McCartnery, J. (2016) "Parameterization of a Calibrated Geothermal Energy Pile Model". *Geomechanics for Energy and the Environment*, 5 (2016) 1-15

8. Peraki, M., **Ghazanfari, E.**, Pinder, G.F., Harrington, T.L. (2016) "Electrodialysis: Application for the Environmental Protection in Shale-gas Extraction". *Separation and Purification*, Vol. 161, pp 96–103

9. Suleiman, M. T., Ni, L., Raich, A., Helm, J., **Ghazanfari, E.** (2015) "Measured Soil-Structure Interaction for Concrete Piles Subjected to Lateral Loading". *Canadian Geotechnical J.*, Vol. 52, pp. 1-12

10. Yoon, S., Cheng, L., **Ghazanfari, E.**, Pamukcu, S., Suleiman, M.T., (2015), "A Theoretical and Empirical Analysis of Underground Communication for Wireless Sensor Networks", *Ad Hoc & Sensor Wireless Networks*, Vol. 24 Issue 3, pp 333-348

11. Ghazanfari, E., Pamukcu, S., Pervizpour, M., Karpyn, Z. (2014), "Investigation of Relative Permeability Coefficients for Electrically Oil Recovery". *Transport in Porous Media*, Vol. 105, pp. 235-253

12. Ghazanfari, E., Shrestha, R., Miroshnik, A., Pamukcu, S. (2012), "Electrically Assisted Liquid Hydrocarbon Transport in Porous Media", *Electrochimica Acta*, 86 (2012) 185-191

13. Ghazanfari, E., Pamukcu, S., Yoon, S., Suleiman, M.T., Cheng, L. (2012), "Geotechnical Sensing using Electromagnetic Attenuation in Radio Transceivers", *Smart Materials and Structures*, 21 (2012) 125017

14. Yoon, S., **Ghazanfari, E.**, Cheng, L., Wang, Z., Pamukcu, S., Suleiman M.T., (2012), "Subsurface Event Detection and Classification Using Wireless Sensor Networks", *Sensors*, 12(11):14862-14886

15. Muraoka, T., **Ghazanfari, E.**, Shrestha, R., Pamukcu, S. (2011), "Electrically Induced Pore Pressures in Clay Slurry", *Separation and Purification*, 79 (2011) 133–138

16. Salehzadeh, H., **Ghazanfari, E.**, (2004), "Parametric Study of Carbonate Sands under Triaxial Shearing", *International Journal of Civil Engineering*, Vol.2, No. 4, pp. 223-231

C2. BOOK CHAPTERS

1. Ghazanfari, E., Pamukcu, S. (2014). "Mathematical Modeling of Electrokinetic Transport and Enhanced Oil Recovery in Porous Geo-media," Chapter 5 in Elektrokinetics for Petroleum and Environmental Engineers, eds. G Chilingar and M Haroun; John Wiley & Sons, Inc., New Jersey, and Scrivener Publishing, LLC, Massachusetts; pp.177-236; 2014; ISBN 978-1-118-84269-0.

2. Pamukcu, S., **Ghazanfari, E.**, Wittle, J.K. (2014). "Reduction of Contaminants in Soil and Water by Direct Electric Current," Chapter 2, in Elektrokinetics for Petroleum and Environmental Engineers, pp.33-102; 2014; ISBN 978-1-118-84269-0.

C3. PEER REVIEWED CONFERENCE PAPERS

1. Kamli-Asl, A., **Ghazanfari, E.**, (2018), "Response of Marcellus Shale Specimens to Cyclic Loading", Proceedings of International Foundations Congress and Equipment Expo 2018, Orlando, FL, 2018

2. Kamli-Asl, A., **Ghazanfari, E.**, (2017), "Investigating the Ductile Response of Marcellus Shale Formation", Proceedings of ASCE Geo-Frontiers 2017, Orlando, FL, 2017

3. Bucci, N., **Ghazanfari, E.**, Lu, H. (2016), "Microbially Induced Calcite Precipitation for Sealing Rock Fractures", Proceedings of ASCE Geo-Chicago 2016, Chicago, IL, 2016

4. Villamor Lora, R., **Ghazanfari, E.** (2015), "Creep Behavior of Shale Formations in Shale Gas Development", Proceedings of International Foundations Congress and Equipment Expo 2015 (IFCEE 2015), San Antonio, TX, 2015

5. Peraki, M., **Ghazanfari, E.** (2015), "Alternative Method of Flow-Back Water Treatment in Shale Gas Development for Environmental Protection", Proceedings of IFCEE 2015, San Antonio, TX, 2015

6. Caulk, R., **Ghazanfari, E.** (2015), "Investigation of Construction Specification Effects on Energy Pile Efficiency", Proceedings of IFCEE 2015, San Antonio, TX, 2015

7. Villamor Lora, R., **Ghazanfari, E.** (2014), "Geomechanical Characterization of Shale Formations for Sustainable Production", ASCE Shale Energy Engineering Conference, Pittsburgh, PA, 2014

8. Shahrokhabadi, S., Vahedifard, F., **Ghazanfari, E.** (2014), "Modeling Flow Regime in Shale using Isogeometric Analysis", ASCE Shale Energy Engineering Conference, Pittsburgh, PA, 2014

9. Caulk, R., McCartney, J., **Ghazanfari, E.** (2014), "Calibration of a Geothermal Energy Pile Model", COMSOL Conference, Boston, MA, 2014

10. Peraki, M., **Ghazanfari, E.** (2014), "Electrodialysis Treatment of Flow-back Water for Environmental Protection in Shale Gas Development", ASCE Shale Energy Eng. Conference, Pittsburgh, PA, 2014

11. Ghazanfari, E., Pamukcu, S., Karpyn, Z., Vahedifard, F. (2014), "Characterization of Oil Bearing Sandstones for Sustainable Oil Production in Electrically Enhanced Oil Recovery". ASCE Geocongress, Atlanta, GA, 2014

12. Pamukcu, S., **Ghazanfari, E.** (2014), "Geo-sensing for Developing Sustainable Responses to Environmental Hazards Underground". Keynote Paper, ASCE GeoCongress, Atlanta, GA, 2014

13. Ghazanfari, E., Pamukcu, S. (2013), "Evaluation of Relative Permeability Functions for Oil Bearing Sandstones in Electrically Enhanced Oil Recovery". International Workshop on Geomechanics and Energy, Lausanne, Switzerland, 2013

14. Ghazanfari, E., Pamukcu, S., (2013), "Mathematical Modeling of Hydrocarbon Transport in Porous Media", Seventh M.I.T. Conf. on Computational Fluid and Solid Mechanics, Boston, MA, 2013

15. Ghazanfari, E., Pamukcu, S. (2013), "Electrically Induced Hydrocarbon Transport in Oil Bearing Formations", International symposium on electrokinetic remediation, Boston, MA, 2013.

16. Ghazanfari, E., Pervizpour, M., Pamukcu, S., (2012), "Mathematical Modeling of Electrically Assisted Hydrocarbon Transport in Porous Media", ASCE GeoCongress, Oakland, CA, 2012

17. Ghazanfari, E., Yoon, S., Pamukcu, S., Suleiman, M.T., Cheng, L., (2012), "Real Time Global Subsurface Monitoring using New Application of Wireless Signal Networks, proof of concept", ASCE GeoCongress, Oakland, CA, 2012

18. Ghazanfari, E., Yoon, S., Pamukcu, S., Suleiman, M.T., Cheng, L., (2012), "Challenges of Geotechnical Sensing and Monitoring using Underground Wireless Signal Networks", SPIE Smart Structures and systems Conference, San Diego, CA, 2012

19. Shrestha, R., Miroshnik, A., **Ghazanfari, E.**, Pamukcu, S., (2012), "Electrically Assisted Recovery of Immiscible Hydrocarbon Liquids from Clayey Formations", ASCE GeoCongress, Oakland, CA, 2012

20. Miroshnik, A., **Ghazanfari, E.**, Shrestha, R., Pamukcu, S., (2012), "Electrically Induced Transport of Immiscible Hydrocarbons in Clay Soil", ASCE GeoCongress, Oakland, CA, 2012

21. Yoon S., Cheng L., **Ghazanfari E.**, Wang, Z., Pamukcu S., Suleiman M.T., (2012), "Subsurface Monitoring using Low Frequency Wireless Signal Networks", IEEE PerCom Conference, Luzano, Switzerland, 2012

22. Ghazanfari, E., Yoon, S., Cheng, L., Suleiman, M.T., Pamukcu, S., (2011), "Wireless Signal Networks for Subsurface Modeling and Geo-Event Characterization", NSF CMMI Engineering Research and Innovation Conference, Atlanta, GA, 2011

23. Ghazanfari, E., Yoon, S., Dong, Y., Li, X., Medina, C., Seserko, S., Cheng, L., Pamukcu, S., (2011), "Subsurface Geo-event Monitoring using Wireless Sensor Networks". ASCE GeoFrontiers Conference, Dallas, TX, 2011

24. Yoon, S., Cheng, L., **Ghazanfari, E.**, Pamukcu, S., and Suleiman, M.T., (2011), "A Radio Propagation Model for Wireless Underground Sensor Networks". IEEE Globecom Conference, Houston, TX, 2011

25. Yoon, S., Ghazanfari, E., Cheng, L., Suleiman, M.T., Pamukcu, S., (2011), "Subsurface Geo-applications of Wireless Signal Networks", SPIE Smart Structure Conference, San Diego CA, 2011

C4. INVITED TALKS

- Geomechanics in shale and deep geothermal energy. University of Rhode Island, October 2017
- Marcellus Shale Characterization. Rensselaer Polytechnique Institute, October 2016
- Third US-Japan Geoenvironmental Engineering Workshop, August 2016
- Exploiting Deep Geothermal Energy. Governor's Institute of Vermont Engineering, June 2016

- Geomechanical Characterization of Marcellus Shale. Northwestern University, March 2015
- Geothermal Energy. Governor's Institute of Vermont Engineering, June 2014
- Geothermal: Sustainable Energy Alternative. Clarkson University, April 2014
- Sustainable Geothermal Energy. UVM Department of Geology, Seminar Series, October 2013
- Environmental Impacts of Hydraulic Fracturing. Vermont Public Radio, November 2013
- New Systems for Energy Development. University of New Hampshire, November 2013

D. HONORS AND AWARDS

- Rossin Doctoral Fellowship (honorary position for select doctoral students at Lehigh University), 2011, 2012, and 2013
- Participation Grant from NSF-CMMI Research and Innovation Conference (2011)
- Graduate Student Poster Competition Award (Lehigh Research Symposium, 2010)

E. RESEARCH

E1. RESEARCH PROJECTS (Sept. 2013 – present)

Title: Investigation of Coupled Processes within Fractures in Enhanced Geothermal Systems (EGS)
Description: Change in fracture aperture and permeability due to coupled processes caused by fluid injection/extraction operations could significantly affect the EGS production success. We are conducting laboratory experiments on fractured granite specimens at reservoir conditions to investigate how the coupled processes affect the fracture aperture and permeability, and improving the predictive capability of existing models using well-constrained experimental data. The experiments are conducted at EGS reservoir conditions in conjunction with monitoring the evolution of fracture characteristics (e.g. aperture, surface roughness, amount of precipitation/dissolution) using high resolution X-Ray Computed Tomography (CT) imaging technique.

Title: Geo-mechanical Characterization of Marcellus Shale formations for Sustainable Energy Production
Description: Understanding the material properties that govern the geomechanical behavior of shale formations under reservoir conditions is of vital importance. We are conducting laboratory experiments on Marcellus shale specimens to investigate the geo-mechanical effects on short-term (i.e. effect on fracturing mechanism) and long-term (i.e. effect on transport properties and production) behavior of these formations. We are evaluating the elasto-plastic, yielding, failure, and anisotropy evolution response of Marcellus shale specimens as a function of pressure, temperature, and bedding angle through a series of hydrostatic and triaxial experiments (single and multi-stage) using high pressure/temperature servo controlled trixial system (Autolab 1500).

Title: Thermal Response Investigation of Geothermal Energy Pile
Description: The performance of energy piles remains a key area of research. The initial geothermal energy pile design controls the heat transfer and thermal stresses associated with the thermal soil-structure interaction for the lifespan of the foundation. We used numerical modeling calibrated with field data to gain more insight into long-term thermal storage and stress mobilization within active energy piles. The calibration, validation, and parameterization of a full-scale three-dimensional finite element model using COMSOL Multiphysics software and high-performance computing (HPC) enabled investigation of energy pile performance variation with respect to construction specifications (U and W tube), the evolution of cross-sectional temperature distribution, and thermal strains along the energy pile.

Title: Application of geophysical techniques for stiffness characterization of extraterrestrial regolith
Description: The goal of this project is to investigate the suitability of the existing geophysical methods for stiffness characterization of extraterrestrial regolith and to perform necessary modifications for adaptation of these geophysical techniques.

Title: Improvements in Intelligent Compaction to Move Away from Density to Stiffness Based Practice
Description: We are identifying the field Quality Assurance (QA) techniques currently available for intelligent compaction to establish QA parameters, evaluating the degree of uncertainty associated with IC measurement values using available data and laboratory experiments, and identifying test sections in collaboration with Vermont Agency of Transportation to conduct IC techniques.

Title: Evaluation and Adaptation of Geotechnical Site Investigation Techniques for Martian Environment
Description: The goal of this project is to investigate two in-situ geotechnical testing techniques for Martian environment and to perform necessary modifications for adaptation of these techniques.

E2. COMPETITIVELY AWARDED GRANTS (TOTAL: 6)

Agency	Role	Budget	Dates	Project Title
VT Agency of Transport.	Single PI	$126,554	01/01/18 - 12/30/19	Implementation of Intelligent Compaction for Pavement Construction in Vermont
VT NASA EPSCoR	Single PI	$25,000	01/01/17 - 12/30/17	Evaluation and adaptation of site investigation techniques for Martian environment
VT Space Grant Consortium	Single PI	$23,797	01/01/16 - 12/30/16	Application of geophysical techniques for characterization of extraterrestrial regolith
VT Agency of Transport.	Lead PI Co-PI: Dewoolkar, M. (UVM)	$56,829	01/01/15 - 08/30/16	Intelligent compaction for embankment, subgrade, and base construction in Vermont
VT NASA EPSCoR	Single PI	$27,500	08/01/14 - 08/31/15	Investigation of coupled processes within fractures in enhanced geothermal systems
National Science Foundation	Senior Personnel PI: Dewoolkar, M. (UVM)	$276,793	11/01/14 - 10/31/15	MRI: Acquisition of a high energy X-ray Microtomography scanner

E3. UNDERGRADUATE RESEARCH AWARDS (TOTAL: 2)

Agency	Role	Budget	Dates	Project Title
UVM TRC	Single PI	5,000	Fall 17 and Spring 18	Application of intelligent compaction for extending the life of transportation infrastructure
VT NASA EPSCoR	Single PI	$4,620	05/20/17 - 08/25/17	Utilization of Martian/Lunar Regolith as Construction Material for Building on Mars/Moon in Support of NASA In-Situ Resource Utilization Initiative

F. TEACHING

COURSES TAUGHT AT UNIVERSITY OF VERMONT (New Preparation)

Course	Credits	Level	Eval. /5.0	CEMS Avg.	Enrolment	Response rate	Semester
Environmental Geotechnics (CE395B)	3	Graduate (Elective)	-	-	-	-	Spring 18
Geotechnical Principles (CE180)	3	Undergraduate (Required)	-	-	-	-	Spring 18
Geo-energy Systems (CE285)	3	Graduate/senior (Elective)	4.94	3.91	43	72%	Fall 17
Geotechnical Principles (CE180)	3	Undergraduate (Required)	4.70	3.95	74	82%	Spring 17
Geo-energy Systems (CE285)	3	Graduate/senior (Elective)	4.64	3.95	16	87%	Spring 17
Geo-environmental Engineering (CE286)	3	Graduate/senior (Elective)	3.75	3.92	26	61%	Fall 16
Geotechnical Principles (CE180)	3	Undergraduate (Required)	3.4	3.86	51	78%	Spring 16
Geotechnical Labs (CE182A)	1	Undergraduate (Required)	4.54	3.86	24	62%	Spring 16
Geotechnical Labs (CE182B)	1	Undergraduate (Required)	4.53	3.86	26	50%	Spring 16
Geo-energy Systems (CE285)	3	Graduate/senior (Elective)	4.8	4.0	24	86%	Fall 15
Geotechnical Principles (CE180)	4	Undergraduate (Required)	3.6	3.9	71	86%	Spring 15
Geo-energy Systems (CE285)	3	Graduate/senior (Elective)	4.5	3.8	22	91%	Fall 14
Geotechnical Principles (CE180)	4	Undergraduate (Required)	3.6	3.7	49	68%	Spring 14
Geo-energy Systems (CE285)	3	Graduate/senior (Elective)	3.9	3.6	13	93%	Fall 13

G. RESEARCH ADVISING

G1. RESEARCH ADVISING/CO-ADVISING OF GRADUATE STUDENTS

Student Name	Degree	Dates	Research Topic
Bijay C.K.	PhD	Sept. 2017-present	TBD
Maziar Foroutan	PhD	Sept. 2017-present	TBD
Arash Kamali-Asl	PhD	Sept. 2015-present	Permeability evolution under coupled processes in enhanced geothermal systems
Maria Peraki	PhD	Sept. 2013-May 2017	Application of Electrokinetics in subsurface energy
Rafael Villamor Lora	MS	Sept. 2013-May 2015 Graduated	Geomechanical characterization of Marcellus shale formation
Robert Caulk	MS	Sept. 2013-May 2015 Graduated	Sustainability of shallow and enhanced geothermal systems

G2. RESEARCH ADVISING/CO-ADVISING OF UNDERGRADUATE STUDENTS

Student Name	Dates	Research Topic
Bonnie McMorrow	May 2017-present	Characterization of extraterrestrial regolith
Kaitlyn Fuller	Sept. 2017-present	Sensors and sensing in intelligent compaction
Mathew Stevens	May 2017-present	3D printing of extraterrestrial regolith
Nicholas Bredice	May 2017-Sept. 2017	Image analysis for experiments in geothermal systems
Precious Jagun	May 2016-present	Coupled processes in enhanced geothermal systems
Andrea Elhajj	May 2015-sept. 2015	Sustainability of enhanced geothermal systems
Nicholas Bucci	May 2015-Dec. 2015	Application of MICP for subsurface sealing
Erica Quallen	Sept. 2015-present	X-Ray CT image analysis in porous media
Sera Fleishman	Sept. 2014-May 2015	COMSOL modeling of pile energy
Thalia Harrington	May 2014-May 2015	Electrodialysis for flowback water treatment in Marcellus

H. SERVICE AND PROFESSIONAL DEVELOPMENT

H1. PROFESSIONAL SERVICES

Thesis/PhD Committee Member

Student Name	Degree	Date	Topic
Laura Obregon	MS	November 2017	Thesis proposal: Generating prescribed level of cohesion in soil simulants in support of extraterrestrial terramechanics research
Ian Anderson	PhD	October 2017	Dissertation title: Prediction and mitigation of scour and scour damage to Vermont bridges
Pegah Jarast-Shamsabadi (UNH)	PhD	August 2017	Dissertation title: Numerical and Physical Modeling of Cone Penetration in Unsaturated Soil and Geo-mechanics of Brazilian Test
Kate Johnson	PhD	April 2017	Proposal title: N/A
Evan Tam	MS	April 2016	Thesis proposal: Role of the Prospect Rock Fault in the Exhumation of High Pressure Rocks in North-Central Vermont
Michael Edwards	MS	October 2014	Thesis title: Characterization of Fillite as a High-sinkage/high-slip planetary soil simulant in support of rover mobility assessment

Journal Article Peer Review (number of reviewed papers are indicated in parenthesis)

Geotechnical Testing Journal (3); Soils and Foundations (2); Natural Hazards (1); Environmental Geotechnics (2); ASME Energy Resources (1); ASCE Hazardous Material (1); Electrochimica Acta (1); Review of Scientific Instruments (1); Rock Mechanics and Rock Engineering (1)

Conferences

- Session chair for ASCE Geo-Chicago 2016 Conference (Summer 16)
- Reviewed conference papers for ASCE Shale Energy Engineering Conference (Summer 13)
- Reviewed conference papers for International Foundations Congress and Equipment Expo (Fall 14)

National Committee Member

- ASCE Rock Mechanics Committee, 2012 – present
- ASCE Geo-environmental Engineering Committee, 2012 – present

H2. PROFESSIONAL DEVELOPMENT

- Faculty Seminar in Undergraduate STEM Research Mentoring, UVM, Spring 2016
- Professional Engineer, Geotechnical Eng., State of California, April 2012 (License # C 80324)
- Teacher Development Certificate, Lehigh University, April 2012

H3. PROFESSIONAL AFFILIATION

- American Society of Civil Engineers
- United States Society on Dams
- Geo-Institute of ASCE
- ASCE Rock Mechanics and Geo-environmental Engineering Committees
- United States Universities Council on Geotechnical Education and Research (USUCGER)
- SPIE (The International Society for Optics and Photonics)

I. INDUSTRIAL EXPERIENCE

Aksco Engineering Inc., Tehran, Iran (Sept. 2001 – July 2008)

- Geotechnical Engineer in modeling, analysis, design and construction supervision of several projects
- Geotechnical and structural design of MSE walls, braced excavation support, and foundations
- Finite element modeling and foundation design
- Inspecting and planning of geotechnical site investigation and laboratory testing for several projects
- Preparing final technical reports and technical presentations for clients
- Preparing proposals, communicating with clients, and assisting project manager in several projects
- Supervising entry-level staff engineers, geotechnical analysis such as slope stability, 2D stress-strain
- Construction management and supervision of several projects