Murad Y. Abu-Farsakh, Ph.D., P.E., F-ASCE

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Office: Louisiana Transportation Research Center
Louisiana State Uninersity
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Baton Rouge, LA 70817

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PERSONAL DATA

Married, U.S. citizen.

EDUCATION:

Ph.D. in Civil Engineering:

Louisiana State University, Baton Rouge, Louisiana, USA, 1997
Dissertation: *Coupled Field Equations for Saturated Soils and Its Application to Piezocone Penetration and Shield Tunneling*.
Emphasis: Geotechnical Engineering (GPA: 4.00/4.00)

M.S. in Civil Engineering:

Jordan University of Science and Technology, Irbid, Jordan, 1988
Thesis: Effect of Transverse and Longitudinal Stiffeners in the Behavior of Plate Girders.
Emphasis: Structural Engineering (Ave. 92.4% - Excellent)

B.S. in Civil Engineering:

University of Jordan, Amman, Jordan, 1985
Rank: second among 91 graduates (Ave. 86.4% - Excellent)

PROFESSIONAL REGISTRATION, SOCIETIES, AND COMMITTEES:

Professional Engineering (P.E.), license in the State of Louisiana.

Member, American Society of Civil Engineer, ASCE, Fellow Member.

Member, Jordan Engineering Association.

Member, US Universities Council on Geotechnical Engineering Research (USUCGER).

Member, Engineering Geology and Site Characterization Committee, Geo-Institute.

Member, Geosynthetics Committee, Geo-Institute.

Member, Deep Foundation Committee, Geo-Institute.

Member, TRB Committee AKG70 - Committee on Foundations of Bridges & Other Structures.

Member, TRB Committee AFP30 - Committee on Soil and Rock Properties

Member, TRB Committee AFS20, Geotechnical Instrumentation and Modeling Committee

Member, Deep Foundation Institute, DFI

Member, The International Association of Foundation Drilling, ADSC-IAFD

Former Member, TRB Committee AFS70 - Committee on Geosynthetics.

Former Member, TRB Committee AFP20 - Committee on Exploration and Classification of earth Materials.

Former Member, TRB Committee AFS50 - Committee on Modeling Techniques in Geomechanics.

Former Member, American Society for Testing and Materials, ASTM.

Former Member, ASTM D18, Committee on Soil Tests.

TECHNICAL & PROFESSIONAL TRAINING:

- Pile Driving Contractors Association (PDCA) - 8TH Biennial Professors' Driven Pile Institute (PDPI) Workshop, Utah State University, Logan, Utah, June 21-26, 2015.
- *Instructor Development Training Course,* NHI Course No. 420018, Baton Rouge, LA, May 20-23, 2014.
- *LRFD for Highway Bridge Substructures and Earth Retaining Structures,* NHI training course, Baton Rouge, LA, August 17-20, 2009.
- *Associates of Drilled Shaft Contractors (ADSC) - 2008 Foundation Engineering Faculty Workshop*, Chattanooga, Tennessee, June 8-14, 2008.
- *Introduction to Mechanistic-Empirical Pavement Design Workshop,* National Highway Institute Course No. 131064, U.S. Department of Transportation/ FHWA, Baton Rouge, LA, December 17-20, 2007.
- *Geosynthetic Engineering Workshop,* National Highway Institute Course No. 132013, U.S. Department of Transportation/ FHWA, Baton Rouge, LA, April 10-12, 2007.
- *LRFD for Highway Bridge Substructures and Earth Retaining Structures,* NHI training course, Baton Rouge, LA, February 13-17, 2006.
- *Elmod IV (FWD) Workshop,* Baton Rouge, LA, March 25-27, 2003.
- *Scientific Approaches to Transportation Research*, NHI training course, Baton Rouge, LA, May 20-23, 2002.
- *Geotechnical Instrumentation for Monitoring Performance*, Workshop, FHWA Module 11, U.S. Department of Transportation/ FHWA, Washington, D. C., January 13, 2002.
- *Mechanically Stabilized Earth Walls and Reinforced Soil Slopes*, Design and Construction Workshop, FHWA Demonstration Project 82, U.S. Department of Transportation/ FHWA, Baton Rouge, LA, January 26-28, 1999.
- *Earth Retaining Structures*, National Highway Institute Course No. 13236, U.S. Department of Transportation/ FHWA, Baton Rouge, LA, May 5-7, 1998.
- *Design and Construction of Driven Pile Foundations*, National Highway Institute Course Nos. 13221 and 13222, U.S. Department of Transportation/ FHWA, Baton Rouge, LA, May 18-21, 1998.
- *Ground Improvement Methods*, FHWA Demonstration Project 116, U.S. Department of Transportation/ FHWA, Baton Rouge, LA, November 17-19, 1998.

MANAGEMENT TRAINING COURSES

- Effective Communication Skills, Part 1, October 30–31, 2000.
- Managing Work Time Effectively, November 30, 2000.
- Managing and Improving Work Processes, December 12–13, 2000.

TEACHING EXPERIENCE:

I taught the following courses (several times) at Louisiana State University:

CE 2450: Statics

CE 2460: Dynamics

CE 3300: Geotechnical Engineering I (Soil Mechanics)

CE 3350: Geotechnical Engineering Lab

CE 3400: Mechanics of Materials

CE 4300: Geotechnical Engineering II (Shallow Foundation)

CE 4310: Geotechnical Engineering III (Deep Foundation)

CE 7300: Advanced Geotechnical Engineering I

CE 7310: Advanced Geotechnical Engineering II

CE 7335: Soil Improvement and Stabilization

CE 7340: Theory and Practice of Geotechnical Laboratory Experiment

CE 7700: Applications and Design with Geosynthetics

CE 7700: Advanced Geotechnical In Situ Testing

CE 7701: Advanced Testing and Analysis of Deep Foundations

GRADUATE STUDENTS ADVICEMENT:

I advised and co-advised the following graduate students:

Ph.D. Students (18)

Amani Almasoud, Ph.D. Candidate, Working on *Evaluating the Magnitude and Time Rate of Consolidation Settlement of Embankments and other Infrastructures from Piezocone Penetration Tests (PCPT).*

Huthaifa Alkhatatbeh, Ph.D. Candidate, Working on *Evaluation and Incorporation of Site and Laboratory Variability into LRFD Design of Pile Foundations*.

Yazan Yazan AL-Harahsheh, Ph.D. Candidate, Working on *Statewide Calibration of CPT Direct Design Methods Using Static Load Test Data*.

Pezhman Moradi, Ph.D. Candidate, working on *Evaluation and Incorporation of Site and Laboratory Variability into LRFD Design of Pile Foundations.*

Isam Alkhasib, Ph.D. Candidate, working on *Evaluating the ultimate capacity of embedded pile in scour critical bridges*.

Mohammad Izadifar, Ph.D. Candidate, working on *Field Instrumenting, Performance Monitoring, and Numerical Modeling of Pile-supported Geosynthetic Load Transfer Platform for Embankments on Soft Soils.*

Mehdi Zadehmohamad, graduated Spring 2024. Dissertation: "*Development of Design Method for Geosynthetic Reinforced Flexible Pavements."*

Md. Habibur Rahman, graduated Summer 2022, Dissertation: *Evaluating And Incorporating Site Variability In Different Geotechnical Engineering Applications."*

Mohsen Amirmojahedi, graduated Spring 2020, Dissertation: "*Estimation of the Axial and Lateral Capacity of Driven Piles from the Results of Cone Penetration Test and Finite Element Analysis."*

Allam Ardah, graduated Fall 2018, Dissertation: "*Field Instrumentations and Numerical Analysis of Geosynthetic Reinforced Soil – Integrated Bridge System (GRS-IBS)"*.

Ahmad Souri, Ph.D. graduated Fall 2017, Dissertation: "*Numerical Evaluation of the Lateral Behavior of Vertical and Battered Pile Group Foundations Using 3-D Finite Element Modeling"*.

Shadi Hanandeh, graduated Fall 2016, Dissertation: "*Performance Evaluation of Instrumented Geosynthetics Reinforced Paved Test Sections built over weak subgrade using Accelerated Load Testing".*

Fairouz Rousti, graduated Spring 2016, Dissertation: *"Numerical Simulation of Pile Installation and Following Setup Considering Soil Consolidation and Thixotropy".*

Md. Nafiul Haque, graduated Fall 2015, Dissertation: "*Field Instrumentation and Testing to Study Set-Up Phenomenon of Driven Piles and Its Implementation in LRFD Design Methodology"*..

Jie Gu, PhD. graduated Fall 2011, Dissertation: "Computational Modeling of Geogrid Reinforced Soil Foundation and Geogrid Reinforced Base in Flexible Pavements".

Qiming Chen, Ph.D., graduated Summer 2007, Dissertation: "An Experimental Study on Characteristics and Behavior of Reinforced Soil Foundation".

Munir Nazzal, Ph.D. graduated Spring 2007, Dissertation: **"**Laboratory Characterization and Numerical Modeling of Geogrid Reinforced Bases in Flexible Pavements".

Lie Wei, Ph.D. graduated Spring 2004, Dissertation: "Numerical Simulation and Field Verification of Inclined Piezocone Penetration Test in Cohesive Soils".

M.S. Students (23)

Mohammad Moontakim Shoaib, Graduated Sum 2023, Thesis Title: *Exploring Machine Learning I-in Deep Foundation and Soil Classification Application*.

Salman Abu Salman, M.S. student. Graduated Sum 2022, Thesis Title: *Effect of Silt and Fine Sand Contents on the Empirical Correlation of SPT and Internal Friction Angle of Sand*.

Abdallah Ikbaria, M.S. student. Graduated Sum 2021. Thesis Title: *Finite Element Numerical Modeling and Parametric Study of Geosynthetic Reinforced Pile-Supported Embankments*.

Abdelqader Idries, M.S. student. Graduated Sum 2020. Thesis Title: *Study the Effect of Heating - Cooling Cycles on the Clay - Concrete Pile Interface Characteristics*.

Md Ariful Hassan Mojumber, M.S. graduated Sum 2020. Thesis Title: *Evaluation of Undrained Shear Strength, Ultimate Pile Capacity, and Pile Set-Up Parameter from Cone Penetration Test Using Artificial Neural Network*.

Md. Imran Hossain, M.S., graduated Fall 2018. Thesis Title: *Evaluation of Undrained Shear Strength and Soil Classification from Cone Penetration Test.*

Md. Habibur Rahman, M.S., graduated Fall 2018. Thesis Title: *Evaluation of Synthetic CPT and Soil Boring Data by Various Spatial Interpolation Techniques.*

Abu Hakim Faisal, M.S., graduated Fall 2018. Thesis Title: *Evaluation of Site Variability and Its Application in Design.*

Benjamin Fernandos, M.S. student. Working on *Field Instrumentatio and Monitoring of Geosynthetic Reinforced Soil - Integration Bridge System (GRS-IBS)*.

Alicia Fortier, M.S., graduated Summer 2015. Thesis Title: *Calibration of Resistance Factors Needed In the LRFD Design of Drilled Shafts*.

Ayan Mehrouta, M.S., graduated Fall 2014. Thesis Title: *Evaluating the Influence of Moisture Variation on Resilient Modulus for Unsaturated Pavement Subgrades*.

Allam Ardah, M.S., graduated Fall 2014. Non-Thesis Project: "*Performance Evaluation of Cement treated/ stabilize very weak subgrade soils*".

Yida Zhang, M.S., graduated Summer 2012. Thesis Title: *Numerical study of Laterally Loaded Batter Piles with the Application of Anisotropic Modified Cam Clay Model*.

Sanjay Dhakal, M.S., graduated Summer 2012. Thesis Title: *Stabilization of Very Weak Subgrade Soils with Cementitious Stabilizers*.

Imran Akond, M.S., graduated Spring 2012. Thesis Title Title: *Laboratory Evaluation of Geosynthetics to Stabilize the Subgrade/Base in Unpaved Roadways*.

Zhachary Autin, M.S., graduated May 2012. Non-Thesis Project: *Evaluation of Geosynthetic Reinforcement of Two-Layer Base-Subgrade Specimens with Monotonic and Repeated Loading Triaxial Tests*.

Binay Pathak, M.S., graduated Spring 2011, Thesis: Analysis of Static Lateral Load Test of Battered Pile Group at I-10 Twin Span Bridge".

Gael Souci, M.S. graduated Fall 2009, Thesis: "Laboratory Characterization of Geogrid-Reinforced Unbound Granular Material for Use in Flexible Pavement Structures".

Rohit Pant, M.S., graduated Summer 2007, Thesis: "Evaluation of Consolidation Parameters of Cohesive Soils Using PCPT Method".

Julian Coronel, M.S., graduated Fall 2005, Thesis: "Frictional Interaction Properties between Geomaterials and Geosynthetics".

Munir Nazzal, M.S., graduated Fall 2003, Thesis: "Field Evaluation of In-situ Testing Technology for Q_C/Q_A Procedures during Construction of Pavement Layers and Embankments".

Ekrem Seyman, M.S., graduated Fall 2003, Thesis: "Laboratory Evaluation of In-Situ Tests as Potential Quality Control/Quality Assurance Tools".

Ather Mohiuddin, M.S., graduated Summer 2003, Thesis: "Analysis of Laboratory and Field Pull-Out Tests of Geosynhthetics in Clayey Soils".

PROFESSIONAL EXPERIENCE:

Research Professor, and Director of Geotechnical Engineering Research Laboratory: Louisiana Transportation Research Center (LTRC), College of Engineering, Louisiana State University, Baton Rouge, Louisiana, (7/1/2013 to present)

Research Associate Professor and Director of Geotechnical Engineering Research Laboratory: Louisiana Transportation Research Center (LTRC), College of Engineering, Louisiana State University, Baton Rouge, Louisiana, (7/1/2008 to 6/30/2013)

Research Assistant Professor and Director of Geotechnical Engineering Research Laboratory: Louisiana Transportation Research Center (LTRC), College of Engineering, Louisiana State University, Baton Rouge, Louisiana, (7/1/2002 to 6/30/2008)

Adjunct Assistant, Associate and Professor: Civil and Environmental Engineering, Louisiana State University, Baton Rouge, Louisiana, (10/1/2002 to present)

Research Associate, Louisiana Transportation Research Center (LTRC), Louisiana State University Baton Rouge, Louisiana, (10/1997 to 6/30/2002)

Graduate Research Assistant, Department of Civil and Environmental Engineering, Louisiana State University, Baton Rouge, Louisiana (8/1992 to 9/1997).

Geotechnical Consultant Engineer, (05/2007 to present):

Geoscience Engineering Testing, Inc., Dallas, TX: worked on consulting on geotechnical site investigation, recommending laboratory tests, and preparing/reviewing geotechnical reports for buildings to clients with recommendations on foundation design (shallow foundation, deep foundation: piles, drilled shafts) and possible soil improvement with lime/cement/fly ash, (2/2015 to present).

HVJ Associates, Houston, TX: worked on consulting on geotechnical site investigation, in-situ testing, improving quality of laboratory tests, slope stability analysis, design of deep foundations, and preparing/reviewing geotechnical reports for buildings to clients with recommendations on foundation design (shallow foundation, deep foundation: piles, drilled shafts), (8/2020 to 5/2023).

Smart Structures LLC, Riviera Beach, Florida: worked on calibrating the resistance factors for the Embedded Data Collector (EDC) pile design methods, based on collected instrumented pile load tests, (2/2018 to 7/2019).

Rapid Global Business Solutions (RGBSI), Troy, MI: worked on reviewing/revising reports using finite element analysis heavy machines for Boeing Company, (2/2018 to 6/2019).

Ehlinger and Associates, New Orleans, Louisiana: worked on the evaluation and assessment of existing building problems (the Alario Athletic Center in New Orleans) associated with total and differential settlement, bearing capacity failure, structural failure and hydraulic associated problems, (5/2014 to 3/2015).

Geoscience Engineering & Testing, Inc., Houston, Texas: worked on reviewing reports on vibration monitoring during pile driving for New Orleans airport extension project, (3/2010 to 8/2011).

Stork Southwestern Laboratories, Inc., Beaumont, Texas: worked on consulting on geotechnical site investigation, recommending laboratory testing, and preparing reports for different geotechnical engineering structures such as power substations, asphalt storage tanks, ship loading terminal structures, underwater ramps for barge facilities, and crane pad sites. The reports included recommendations for foundation design (shallow foundation, deep foundation: piles, drilled shafts), allowable axial and lateral capacity of piles and drilled shafts, soil improvement and stabilization and slope stability problems, (5/2007 to 4/2008.

Senior Geotechnical and Material Engineer*:* Arab Corporation for Engineering and Geotechnology, Amman, Jordan (5/1989 to 8/1992).

Structural Design Engineer*,* Subhi Tabal Establishment, Amman, Jordan, (6/1988 to 5/1989).

Graduate Research/Teaching Assistant*,* Department of Civil Engineering, Jordan University of Science and Technology, Irbid, Jordan, (9/1985 to 5/1988).

Training Engineer, COWI Consulting Firm, Copenhagen, Denmark, summer 1984. Worked in the design of prestressed concrete bridges.

HONORS:

Dean's List: - University of Jordan - several Times.
Honor List: - University of Jordan - several Times.

COMPUTER SKILLS:

Computer Systems: Main frame, Work stations, and PC computers
Operating Systems: UNIX, VMS, MS-DOS, MS-WINDOWS.
Language: FORTRAN, Visual Basic.
Softwares: ABAQUS, PLAXIS.
Word Processing: Word Perfect, Microsoft Word, Frame Maker, and LaTex
Spread Sheets: Excel, Quattropro
Graphics: Grapher, Surfer, xmgr, Sigmaplot, and Freelance.
Statistics: STATISTICA
Mathematics: MathCad

COURSES:

Advanced Geotechnical Engineering I; Advanced Geotechnical Engineering II; Ground Modification and Soil Stabilization ; Soil Dynamics and Earthquake Engineering; Theory of Plasticity, Viscoelasticity and Viscoplasticity; Solid and Continuum Mechanics; Finite Element Method, I, and II; Advanced Engineering Foundation; Advanced Material of Construction; Applied Mathematics for Engineering; Advanced Pavement Design; Highway Construction Materials; Prestressed Concrete Design; Matrix Analysis of Structures; Structural Stability; Structural Dynamics; Introduction to Structural Reliability; Engineering Analysis and Statistics; Numerical Methods in Geotechnical Engineering (aud); Principles of Soil Behavior (aud); Environmental Geotechnics (aud).

Soil Mechanics; Engineering Foundation; Reinforced Concrete Design I; Reinforced Concrete Design II; Structural Analysis I; Structural Analysis II; Structural Analysis III; Steel Design.

FUNDED PROJECTS:

1. Principal Investigator – "*Statewide Calibration of CPT Direct Design Methods Using Static Load Test Data*" funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 426,843, 05/01/2024-04/30/2027.
2. Principal Investigator – "*Evaluation and Incorporation of Site and Laboratory Variability into LRFD Design of Pile Foundations - Phase 2*" funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 432,545, 11/01/2023-10/30/2026.
3. Principal Investigator – "*Evaluation of Embedded Pile Resistance on Scour Critical Bridges*" funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 383,004, 05/01/2022-04/30/2025.
4. Principal Investigator – "*Development of a Design Methodology for Geosynthetic Reinforced Pavement using Finite Element Numerical Modeling*" funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 300,302, 04/01/2020-03/31/2024.
5. Principal Investigator – "*Internal Friction Angle of Sands with High Fines Content*" funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 146,690, 04/01/2020-06/30/2023.
6. Principal Investigator – "*Instrumentation and Modeling of Geosynthetic Load Transfer Platform Performance*" funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 377,380, 10/01/2020-06/30/2023.
7. Principal Investigator – "*Update the Pile Design by CPT Software to Incorporate Newly Developed Pile-CPT Methods and Other Design Features*" funded by Federal Highway Administration

(FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 457,097, 06/01/2019-03/31/2023.

8. Principal Investigator – "*Verification and Implementation of Set-Up Empirical Models in Pile Design*," funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 247,771, 08/01/2016-07/31/2018.
9. Principal Investigator – "*Incorporating the Site Variability and Laboratory/In-situ Testing Variability of Soil Properties in Geotechnical Engineering Design*," funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 476,813, 07/01/2016-06/30/2022.
10. Principal Investigator – "*Finite Element Analysis of the Lateral Load Test on Battered Pile Group at I-10 Twin Span Bridge*," funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 260,368, 03/01/2016-05/31/2018.
11. Principal Investigator – "*Monitoring of In-Service Geosynthetic Reinforced Soil (GRS) Bridge Abutments in Louisiana*," funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 302,200, 10/01/2014-12/31/2017.
12. Principal Investigator – "*In Situ Evaluation of Design Parameters and Procedures for Cementitiously Treated Weak Subgrades using Cyclic Plate Load Tests*," funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 294,679, 3/01/2013-09/30/2015. (Co-PI Dr. Qiming Chen).
13. Co-Principal Investigator – "Calibration of LRFD Geotechnical Axial (Tension and Compression) Resistance Factor (ϕ) for California." Funded by CALTRANS, $222,606, 01/01/2015 – 06/30/2017. (PI: Dr. Xinbao Yu – University of Texas at Arlington).
14. Principal Investigator – "*Accelerated Load Testing of Geosynthetic Stabilized/Rreinforced Subgrade/Base in Unpaved and Pavement Test Sections,"* funded by FHWA and LA DOTD, **$** 258,133, 01/01/2011-12/31/2015. (Co-PI Dr. Xiaochao Tang).
15. Principal Investigator – "*Field Instrumentation and Testing to Study Set-up Phenomenon of Piles Driven into Louisiana Clayey Soils*," funded by Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development (LA DOTD), $ 489,708, 01/01/2011-12/31/2015. (Co-PI Dr. Qiming Chen).
16. Co-Principal Investigator – "*An Integrated Computational and Experimental Study of Driven Pile Set-up in Soft Clays.*" Funded by Board of Regents – Industrial Ties Research Subprogram (ITRS) program, $307,781 7/01/2012-6/30/2015. (PI: Dr. Carol Friedland, other Co-PIs: Drs. Gouping Zhang and Emerald Roider).
17. Co-Principal Investigator – "*Assessment of Environmental, Seasonal and Regional Variations in Pavement Base and Subgrade Properties,"* funded by FHWA and LA DOTD, $ 262,210, 9/1/2011-8/31/2013. (PI Kevin Gaspard).
18. Principal Investigator – "Support Study to *Accelerated Load Testing of Geosynthetic StabilizedRreinforced Subgrade/Base in Unpaved and Pavement Test Sections*," a project funded by Tensar and TenCate Mirifi, $200,000, 12/01/20010-05/31/2012.
19. Principal Investigator – "Calibration of Resistance Factors for Drilled Shafts for the New FHWA Design Method," funded by FHWA and LA DOTD, **$** 97,857, 1/12/2011-07/31/2012.
20. NCHRP 10-84: Modulus-Based Construction Specification for Compacted of Earthwork and Unbound Aggregate." Funded by National Cooperative Research Program, Transportation Research Board, National Research Council, **$** 500,000, 10/12/2010-03/31/2013. (PI: Dr. Soheil Nazarian, University of Texas at El Paso)

21. Principal Investigator – "*Substructure Health Monitoring of the I-10 Twin Span Bridge*." Funded by Innovative Bridge Research and Deployment (IBRD) program, FHWA, $565,550, 11/01/2007-07/31/2012.
22. Principal Investigator – "Support Study to *Substructure Health Monitoring of the I-10 Twin Span Bridge*." Funded by FHWA and LA DOTD, $232,951, 01/01/2008-07/30/2012.
23. Principal Investigator – "*Field Demonstration of New Bridge Approach Slab Designs and Performance.*" Funded by FHWA and LA DOTD, $393,176, 08/01/2008-07/31/2011 (Co-PI Dr. Qiming Chen).
24. Principal Investigator – "*Calibration of Resistance Factors needed in the LRFD design of Driven Piles.*" Funded by FHWA and LA DOTD, $250,775, 11/1/2006-03/30/2010 (Co-PI Dr. Ching Tsai).
25. Principal Investigator – "*Evaluation of the Base/Subgrade Soil under Repeated Loading*." Funded by FHWA and LA DOTD, $433,483, 8/1/2005-06/30/2010.
26. Principal Investigator – "Support Study to *Evaluation of the Base/Subgrade Soil under Repeated Loading.*" Funded by Tensar International Corporation, $101,251, 01/01/2008-12/31/2008.
27. Co-Principal Investigator – "*Effect of Drainage in Unbound Aggregate Bases on Flexible Pavement Performance*." Funded by FHWA and LA DOTD, $285,574, 3/1/2006-08/31/2008 (PI. Dr. Tao Mingjiang).
28. Principal Investigator – "*Control of Embankment settlement: Field Verification of PCPT Prediction Methods*." Funded by FHWA and LA DOTD, $268,627, 3/1/2005-12/31/2010 (Co-P.I. Gavin Gautreau).
29. Principal Investigator – "*Use of Reinforced Soil Foundation (RSF) to Support Shallow Foundation*." Funded by FHWA and LA DOTD, $391,058, 3/1/2004-12/31/2007. (Co-P.I. Dr. Izzaldin Almoh'd).
30. Principal Investigator – "*Development of Laboratory Testing Facility for Evaluation of Base-Soil Behavior under Repeated Loading.*" Funded by FHWA and LA DOTD, $62,974, 3/1/2004-10/30/2004. (Co-P.I. Dr. Izzaldin Almoh'd).
31. Co-Principal Investigator – "*Alternative Methods to Trench Backfill.*" Funded by FHWA and LA DOTD, $127,480, 10/1/2002-3/31/2004 (P.I. Dr. Zhongjie Zhang).
32. Principal Investigator – "*Assessment of In-Situ Test Technology for Construction Control of Base Courses and Embankments.*" Funded by FHWA and LA DOTD, $160,000, 7/1/2001-12/31/2003 (Co-P.I. Dr. Khalid Alshibli).
33. Co-Principal Investigator – "*Support Study for the Assessment of In-situ Test Technology for Construction Control of Base Courses and Embankments*." Funded by FHWA and LA DOTD, $83,200, 7/1/2001-12/31/2003 (P.I. Dr. Khalid Alshibli).
34. Co-Principal Investigator – "*Development of Models to Estimate the Subgrade and subbase Layers Resilient Modulus from In-Situ Devices Test Results for Construction Control*." Funded by FHWA and LA DOTD, $100,630, 1/1/2003 – 6/31/2004 (P.I. Louay Mohammad).
35. Co-Principal Investigator – "*Inclined Piezocone Penetration Aspects – Theoretical Formulation and Experimental Verification.*" Funded by National Science Foundation (NSF), CSM-9907951, $162,312, 10/1/1999-9/30/2003 (P.I. Dr. Mehmet Tumay).
36. Principal Investigator – "*LTRC Support for Geosynthetic Research at the Geosynthetic Engineering Laboratory*." Funded by FHWA and LA DOTD, $177,000, 7/1/2001-6/30/2002.
37. Principal Investigator – "*Evaluation of Consolidation Characteristics of Cohesive Soils from Piezocone Penetration Tests (PCPT)*." Funded by FHWA and LA DOTD, $125,580, 11/1/1999-12/31/2003.

38. Co-Principal Investigator – "*Evaluation of Bearing Capacity of Piles from Cone Penetration Tests*." Funded by FHWA and LA DOTD, $124,109, 5/15/1998-12/31/2001 (P.I. Dr. Hani Titi).

REFEREED JOURNAL PUBLICATIONS:

1. Nobahar, M., **Abu-Farsakh, M.**, and Izadifar, M., 2024 "Evaluating the mechanisms and performance of Geosynthetic-Reinforced Load Transfer Platform of pile-supported embankments design methods Geotextiles and Geomembranes Journal, Vol. 52, No. 6, pp. 1112-1133.
2. Khasib, I., Amirmojahedi, M. and **Abu-Farsakh, M.**, 2024 "Evaluating the Direct CPT-Based Design Methods for Estimating the End Bearing and Side Resistance of Instrumented Test Piles," Geotechnical and Geological Engineering Journal, Vol. 42, No. 7, pp. 5871-5890.
3. Shoaib, M., and **Abu-Farsakh, M.**, 2024 "Developing Tree-Based Machine Learning Models for Estimating the Pile Setup Parameter for Clay Soils," Journal of Transportation Research Record, Vol. 2678, No. 1, pp. 136-149
4. Mojunder, M. A., **Abu-Farsakh, M.**, Rosti, F., and Chen S., 2024 "Assessment of Driven Pile's Ultimate Capacity through Artificial Neural Network Analysis of CPT Data," Journal of Transportation Research Record, 03611981241257407.
5. Izadifar, M., **Abu-Farsakh, M.**, and Chen, S., 2024 "Case Study on Instrumenting and Monitoring Geosynthetic-Reinforced Pile-Supported MSE Wall Built over Soft Soil," Journal of Transportation Research Record.
6. **Abu-Farsakh, M.**, and Shoaib, M., 2024 "Machine Learning Models to Evaluate the Load-Settlement Behavior of Piles from Cone Penetration Test Data," Journal of Geotechnical and Geological Engineering, Vol. 42, pp. 3433–3449.
7. Rosti, F., and **Abu-Farsakh, M.**, 2024 "An Elastoplastic Model to Simulate Pile Installation and Setup in Clay Soils," Geotechnical and Geological Engineering Journal, Vol. 42, No. 5, pp. 1-15.
8. Khasib, I., and **Abu-Farsakh, M.**, 2024 "Assessment of Axial Resistance of Piles Considering Consolidation Setup and Aging Setup Using Direct Pile-CPT Methods," Journal of Transportation Research Record, 03611981241236789.
9. **Abu-Farsakh, M.**, Rahman, M. H., and Jafari, N., 2024 "Assessment of Different Spatial Interpolation Techniques for Generating Synthetic Soil Boring Data," Journal of Transportation Research Record, Vol. 2678, No. 6, pp. 1020-1035
10. Haque, Md. N., and **Abu-Farsakh, M.**, 2024 "Evaluation of Design Parameters (α and β) for Analysis and Design of Piles on Soft Clays," Journal of Transportation Research Record, 03611981241236484.
11. Chaabani, W., Ramadna, M., and **Abu-Farsakh, M**., 2023 "Numerical Modeling of the Effect of a Weak Zone on the Bearing Capacity of Strip Footings," Geotechnical and Geological Engineering Journal, Vol. 41.
12. **Abu-Farsakh, M.**, and Idris, A., 2023 "Enhancement of Clay-concrete Interface Strength through Applying Cycles of Heating and Cooling," Geothermics Journal, Vol. 113.
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CONFERENCE PROCEEDINGS

1. **Abu-Farsakh, M.**, Rahman, M. H., and Titi, H., 2024 "Evaluate and Incorporate Site Variability into LRFD Design of Pile Foundations," Proceedings of the 49th Annual Conference on Deep Foundations, Oct 7-10, 2024, Aurora, CO.
2. **Abu-Farsakh, M.**, and Shoaib, M., 2024 "Develop Machine Learning Models to Generate the Load-Settlement Curves of Piles from Cone Penetration Test Data," Proceedings of the 49th Annual Conference on Deep Foundations, Oct 7-10, 2024, Aurora, CO.
3. **Abu-Farsakh, M.**, and Rahman, M. H., 2024 "Incorporating site variability into LRFD design of piles," Proceedings of the XVIII European Conference on Soil Mechanics and Geotechnical Engineering, Aug. 26-30, Lisbon, Portugal.
4. **Abu-Farsakh, M.**, and Izadifar, M., 2024 "Evaluation of design methods for geosynthetic-reinforced pile-supported embankments based on case studies," Proceedings of the XVIII European Conference on Soil Mechanics and Geotechnical Engineering, Aug. 26-30, Lisbon, Portugal.
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82. Wei L., **Abu-Farsakh, M. Y.,** and Tumay, M. T., 2005, "Influence of Initial Stress Anisotropy on Inclined Cone Tip Resistance in Clay," *Proceedings of McMat2005*: 2005 Joint ASME/ASCE/SES Conference on Mechanics and Materials June 1–3, 2005, Baton Rouge, Louisiana, USA.

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86. **Abu-Farsakh, M. Y.,** 2002 "Evaluation of Strength and Consolidation Parameters of Cohesive Soils from Piezocone Penetration Tests," presented at the 81st TRB annual meeting, Washington, D.C.

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PRESENTATIONS

1. **Abu-Farsakh, M. Y.**, 2024 "Accelerated Load Testing to Evaluate the Performance of Geosynthetics in Reinforced Flexible Pavement Built over Weak Subgrade." Invited speaker at the ASCE Seattle Section Geotechnical Group / Seattle Geo-Institute Chapter Seminar, Oct. 17-21, Seattle, WA.
2. **Abu-Farsakh, M.**, and Rahman, M. H., 2024 "Incorporating site variability into LRFD design of piles," Presented at the XVIII European Conference on Soil Mechanics and Geotechnical Engineering, Aug. 26-30, Lisbon, Portugal.
3. **Abu-Farsakh, M.**, and Izadifar, M., 2024 "Evaluation of design methods for geosynthetic-reinforced pile-supported embankments based on case studies," presented at the XVIII European Conference on Soil Mechanics and Geotechnical Engineering, Aug. 26-30, Lisbon, Portugal.
4. **Abu-Farsakh, M. Y.,** and Shoaib, M., 2024 "Estimating the Ultimate Capacity of Piles Using Machine Learning Models based on CPT Data," Presented at the 2024 IFCEE conference, May 7-10, Dallas, Texas.
5. **Abu-Farsakh, M. Y.,** and Shoaib, M. M., 2024. Exploring Tree-Based Machine Learning Models to Predict Load-Settlement Behavior of Piles from Cone Penetration Test Data, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
6. **Abu-Farsakh, M. Y.,** Rahman M. H., Nobahar M., and Okeil, A., 2024. Implementing Site Variability into LRFD Design of Shallow Foundations on Cohesive Soils, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
7. Hossain, M. I., and **Abu-Farsakh, M. Y.,** 2024. Develop Regression Models to Evaluate the Undrained Shear Strength of Clay soils from Cone Penetration Tests, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
8. Zadehmohamad, M., **Abu-Farsakh, M. Y.,** and Voyiadjis, G., 2024. Development of Reduction Factors for Sublayers of MEPDG Rutting Equations in Geosynthetic Reinforced/Stabilized Pavements, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
9. Izadifar, M., **Abu-Farsakh, M. Y.,** and Chen, S., 2024. A Case Study on Instrumenting and Monitoring Geosynthetic-Reinforced Pile-Supported MSE Wall Built over Soil, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
10. Haque, M. N., and **Abu-Farsakh, M. Y.**, 2024. Evaluation of Design Parameters (α and β) for Analysis and Design of Piles on Soft Clays, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
11. Khasib, I., and **Abu-Farsakh, M. Y.,** 2024. Assessment of Axial Resistance of Piles Considering Consolidation Setup and Aging Setup Using Direct Pile-CPT Methods, presented at the TRB 103rd Annual Meeting, Washington, D.C., January 6-11, 2024.
12. **Abu-Farsakh, M. Y.,** Rauser, J. and Gautreau, G. 2024. Update the "Louisiana Pile Design from Cone Penetration Test (LPD-CPT)" software. Presented during the TRB AKG70 Committee meeting on Foundations of Bridges and other infrastructures, TRB 103rd Annual Meeting, Washington, D.C., January 6-11.
13. **Abu-Farsakh M. Y**., and Idries, A., 2023 "Evaluate the Impact of Heating and cooling on the Interface Shear Strength between Clay and Concrete Surface," Presented at the 2023 ICATH conference, December 25-26, 2023, Rabat, Morocco.

14. **Abu-Farsakh, M.,** and Rahman, M., 2023 "Incorporating Site Variability into LRFD Design of Pile Foundations," Presented at the Geo-Congress 2023 conference, March 26-29, Los Angeles, California.
15. Rahman, M., **Abu-Farsakh, M.,** and Kameshwar, S., 2023 "Evaluating the Site variability using Bayesian Analysis," Presented at the Geo-Congress 2023 conference, March 26-29, Los Angeles, California.
16. **Abu-Farsakh, M.,** "Develop Machine Learning (ML) Models for Estimating the Ultimate Pile Capacity from Cone Penetration Test (CPT)," presented at the 2023 Louisiana Transportation Engineering Conference, Baton Rouge, Louisiana, March 12-15, 2023.
17. Izadifar, M., Luo, N., **Abu-Farsakh, M.**, and Chen, S., 2023 "Performance Evaluation of Design Methods for Geosynthetic-Reinforced Pile-Supported Embankments," presented at the TRB 102nd Annual Meeting, Washington, D.C., January 8-12, 2023.
18. Mojumder, M., and **Abu-Farsakh, M.**, 2023 "Evaluating the Ultimate Capacity of Driven Pile from CPT Data using Artificial Neural Network," presented at the TRB 102nd Annual Meeting, Washington, D.C., January 8-12, 2023.
19. Zadehmohamad, M., **and Abu-Farsakh, M.**, 2023 "Evaluating the Structural Benefits of Geosynthetic Reinforcement in Flexible Pavements using Multiple Regression Analysis and Machine Learning Techniques," presented at the TRB 102nd Annual Meeting, Washington, D.C., January 8-12, 2023.
20. **Abu-Farsakh,** Rahman, M., and Jafari, N., 2023 "Assessment of different Spatial Interpolation Techniques for Generating Synthetic Soil Boring Data," presented at the TRB 102nd Annual Meeting, Washington, D.C., January 8-12, 2023.
21. **Abu-Farsakh, M.**, Souri, A., and Voyiadjis, G., 2023 "Numerical Simulation of a Barge Impact on Bridges with Different Configurations of Pile Group Foundations," ," presented at the TRB 102nd Annual Meeting, Washington, D.C., January 8-12, 2023.
22. Shoaib, M., and **Abu-Farsakh, M.**, 2023 "Exploring Tree-Based Machine Learning Models to Predict Ultimate Pile Capacity from Cone Penetration Test Data," presented at the TRB 102nd Annual Meeting, Washington, D.C., January 8-12, 2023.
23. **Abu-Farsakh, M.**, Ikbarieh, A., and Izadifar, M., 2022 "FE parametric study of embankment supported by geosynthetic reinforced load transfer platform and timber piles tip on sand," Presented at the Geoearth conference, September 22-23, Barcelona, Spain.
24. **Abu-Farsakh, M.**, Idries, A., and Chen, S., 2022 "Evaluating the Effect of Heating-Cooling Cycle on the Clay-Concrete Pile Interface," Presented at the Geo-Congress 2022 conference, March 20-23, Charlotte, North Carolina.
25. **Abu-Farsakh, M.,** "Evaluating the Performance of Embankment Supported by Geosynthetic Load Transfer Platform and Piles Tip on Sand," presented at the 2022 Louisiana Transportation Engineering Conference, Baton Rouge, Louisiana, March 15-16, 2022.
26. **Abu-Farsakh, M.**, 2022 "Accelerated Load Testing to Evaluate the Performance of Geosynthetic Reinforced Flexible Pavement built over Weak Subgrade," Presented at the Ge-Omaha 39th Annual Geotechnical Conference, February 4, Omaha, Nebraska.
27. **Abu-Farsakh, M.**, 2022 "Evaluation of Pile-Cone Penetration Test (CPT) Methods Using Multidimensional Unfolding Technique and Evaluating the Ultimate Pile Capacity from CPT Data Using the Artificial Neural Network," presented at the TRB Workshop 1436 on exploring the role of data interchange and artificial intelligence in future bridge and foundation design, performance, and resiliency, 101st TRB Annual Meeting, Washington, D.C., January 13, 2022.

28. Rahman, M., **Abu-Farsakh M.**, and Kameshwar, S. 2022 "The use of Bayesian Analysis for Implementing the Specific Site Variability into LRFD Design of Piles," presented at the TRB 101st Annual Meeting, Washington, D.C., January 9-13, 2022.
29. **Abu-Farsakh, M.**, Chen, Q., Hanandeh, S., and Saghebfar, M., 2022 "Quantifying the Benefits of Geosynthetics Reinforcement in Flexible Pavement Design Using Cyclic Plate Load Testing," presented at the TRB 101st Annual Meeting, Washington, D.C., January 9-13, 2022.
30. Ikbarieh, A. Izadidifar, M., **Abu-Farsakh M.**, and Voyiadjis, G., 2022, "A Parametric Study of Embankment Supported by Geosynthetic Reinforced Load Transfer Platform and Timber Piles Tipped on Sand," presented at the TRB 101st Annual Meeting, Washington, D.C., January 9-13, 2022.
31. **Abu-Farsakh, M.**, and Rahman, M., 2021 "Incorporating Site Variability Into LRFD Design of Pile Foundations," Proceedings of the 46th Annual Conference on Deep Foundation, October 12-15, Las Vegas, Nevada.
32. Rahman, M., and **Abu-Farsakh M.**, 2021 "Evaluation of Various Spatial Interpolation Techniques for Generating Synthetic CPT Data Profile," Proceedings of the 4th International Conference on Transportation Geotechnics (ICTG), May 24 - 27, 2021.
33. **Abu-Farsakh, M.**, and Mojumder M., 2021 "Evaluating the Ultimate Pile Capacity from Cone Penetration Test (CPT) Data using Artificial Neural Network," presented at the TRB Webinar: The Future of Bridge Foundation Designs with Artificial Intelligence, Virtual, June 22, 2021.
34. **Abu-Farsakh, M.**, and Ikbarieh, A., 2021 "Instrumentation and Modeling of Geosynthetic Load Transfer Platform Performance," presented at the 44th Southwest Geotechnical Engineering Conference, Virtual, June 22-24, 2021.
35. Rahman, M., and **Abu-Farsakh M.**, 2021 "Evaluation of Various Spatial Interpolation Techniques for Generating Synthetic CPT Data Profile," presented at the 4th International Conference on Transportation Geotechnics (ICTG), Virtual, May 24 - 27, 2021.
36. Imseeh, W., Alshibli, K., **Abu-Farsakh, M.**, and Kniazewycz, T., 2021 "Geosynthetic Reinforced Fill Material for Tennessee Bridge Approach Slab Support," presented at the TRB 100th annual meeting, Virtual, January 9-13, 2021.
37. **Abu-Farsakh M.**, Rahman, M., Ghaaowd, I., and Jafari, N. 2021 "Evaluation of Site Variability and Its Implementation into LRFD Design of Pile Foundations," presented at the TRB 100th annual meeting, Virtual, January 9-13, 2021.
38. Ghaaowd, I., **Abu-Farsakh M.**, and Rahman, M., 2021 "Evaluating the Effect of Site Variability on the Bearing Capacity Resistance Factor of Foundations and the Slope Stability Analysis," presented at the TRB 100th annual meeting, Virtual, January 9-13, 2021.
39. Mojumder, M., **Abu-Farsakh M.**, and Chen, I., 2021 "Evaluating the Pile Set-up Parameter, 'A', using Artificial Neural Network," presented at the TRB 100th annual meeting, Virtual, January 9-13, 2021.
40. Idries, A., **Abu-Farsakh M.**, and Chen, I., 2021 "Interface Behavior of Clay due to Heating-Cooling Cycle," presented at the TRB 100th annual meeting, Virtual, January 9-13, 2021.
41. **Abu-Farsakh M.**, and Ardah, A., 2020 "Factors Affecting the Performance of Geosynthetic Reinforced Soil Abutments under Service Loading," presented at the GeoAmerica: 4th Pan American Conference on Geosynthetics Conferenc, April 26-29, Rio de Janeiro, Brazil.

42. **Abu-Farsakh, M**., and Amirmojahedi, M., 2020 "Develop a Combined Pile-CPT Method Based on Log-normal Distribution Properties to Optimize the Estimation of Ultimate Pile Capacity," presented at the Geo-Congress 2020 conference, Feb 24-28, Minneapolis, Minnesota.
43. **Abu-Farsakh M.**, Alimohammadi H., and Mohammad L., 2020 "Finite Element Analysis to Evaluate the Benefits of Geosynthetic Reinforcement in Flexible Pavements Over Weak Subgrade for Low-Volume Traffic Roads," presented at the TRB 99th Annual Meeting, Washington, D.C.
44. Ghaaowd I., Faisal A., Rahman M., and **Abu-Farsakh M.**, 2020 "Evaluation of Site Variability Effect on the Geotechnical Data and Its Application," presented at the TRB 99th Annual Meeting, Washington, D.C.
45. **Abu-Farsakh M.**, Amirmojahedi M., and Voyiadjis G., 2020 "Development of Combined Pile-CPT Methods for Estimating the Ultimate Axial Capacity of Piles Driven in Different Soil Categories," presented at the TRB 99th Annual Meeting, Washington, D.C.
46. Rahman M., **Abu-Farsakh M.**, and Jafari N., 2020 "Generation and Evaluation of Synthetic CPT Data Using Various Spatial Interpolation Techniques," presented at the TRB 99th Annual Meeting, Washington, D.C.
47. **Abu-Farsakh M.**, and Mojumder A., 2020 "Exploring Artificial Neural Network for Evaluating the Undrained Shear Strength of Soil from the CPT Data," presented at the TRB 99th Annual Meeting, Washington, D.C.
48. Mojumder A., **Abu-Farsakh M.**, and Zhang Z., 2020 "Evaluating the Ultimate Pile Capacity from CPT Data Using Artificial Neural Network," presented at the TRB 99th Annual Meeting, Washington, D.C.
49. Abu-Farsakh, M., and Amirmojahedi, M., 2019 "Evaluation of Direct CPT Methods for Estimating the Ultimate Capacity of Driven Piles," presented at the XVI Panamerican Conference on Soil Mechanics and Geotechnical Engineering, November 17-20, Cancun, Mexico.
50. **Abu-Farsakh, M.**, and Amirmojahedi, M., 2019 "Developing a Combined Pile-CPT method for Estimating the Ultimate Axial Capacity of Driven Piles," presented at the 10th New York City Bridge Conference, August 26-27, New York. NY.
51. **Abu-Farsakh, M.**, Ardah A., and Voyiadjis G., 2019 "Finite Element Analysis to Evaluate the Performance of a Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS) under Working Stress Loadings," presented at the 10th New York City Bridge Conference, August 26-27, New York. NY.
52. Amirmojahedi, M., and **Abu-Farsakh, M.**, 2019 "Evaluation of Direct CPT Methods for Estimating the Ultimate Capacity of Driven Pile," presented at the Geo-Congress 2019 conference, March 24-27, Philadelphia, Pennsylvania.
53. Hague Md. N., and **Abu-Farsakh, M.**, 2019 "Development of Axial Load Transfer Analytical Models (t-z and q-z) for PSC Piles," presented at the Geo-Congress 2019 conference, March 24-27, Philadelphia, Pennsylvania.
54. **Abu-Farsakh M.**, Hanandeh S., Mohammad L., and Chen Q., 2019 "Performance of Geosynthetic Reinforced/Stabilized Paved Roads Built over Soft Soil under Cyclic Plate Loads," presented at the Geosynthetics 2019, February 10-13, Houston, Texas.

55. **Abu-Farsakh M.**, Ardah A., and Voyiadjis G., 2019 "Finite Element Parametric Study on the Performance of Geosynthetic Reinforced Soil -Integrated Bridge System (GRS-IBS)," presented at the Geosynthetics 2019, February 10-13, Houston, Texas.
56. Hague Md. N., and **Abu-Farsakh, M.**, 2019 "Development of Axial Load Transfer Curves for PSC Piles in Clayey Soil presented at the 98th TRB annual meeting, Washington, D.C.
57. **Abu-Farsakh, M.**, and Hague Md. N., 2019 "A New Method to Estimate the Modified Time Factor to Estimate the Duration of Pile Setup," presented at the 98th TRB annual meeting, Washington, D.C.
58. Hossain Md. I., and **Abu-Farsakh, M.**, 2019 "Evaluation of Undrained Shear Strength from Cone Penetration Test," presented at the 98th TRB annual meeting, Washington, D.C.
59. Alimohammadi H. and **Abu-Farsakh, M.**, 2019 "Finite Element Parametric Study on Rutting Performance of Geosynthetic Reinforced Flexible Pavements," presented at the 98th TRB annual meeting, Washington, D.C.
60. **Abu-Farsakh M.**, Ardah A., and Voyiadjis G., 2018 "Effect of Differential Settlement on the Performance of the Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IPS): Numerical Investigation," presented at the GeoDallas 2018 Conference, Dallas, Texas, October 15-17.
61. **Abu-Farsakh M.**, Ahmad Souri A., and Voyiadjis G., 2018 "Finite Element Numerical Analysis to Evaluate the Lateral Behavior of Three Pile Group Configurations," presented at the DFI-EFFC International Conference on Deep Foundations and Ground Improvement: Urbanization and Infrastructure Development-Future Challenges, Rome, Italy, June 5-8.
62. Haque Md. N., **Abu-Farsakh M.**, and Nickel C., 2018 "Design and Load Testing Program of Large Diameter Open-1 Ended Piles for A Bridge Construction Project in Louisiana," presented at the DFI-EFFC International Conference on Deep Foundations and Ground Improvement: Urbanization and Infrastructure Development-Future Challenges, Rome, Italy, June 5-8.
63. Haque Md. N., **Abu-Farsakh M.**, and Nickel C., 2018 "Evaluation of Design Parameters (α and β) for Open-Ended Instrumented Test Pile," presented at the International Foundation Congress and Equipment Expo Conference, IFCEE 2018, Orlando, Florida, March 5-10.
64. **Abu-Farsakh M.**, Ardah A., and Voyiadjis G., 2018 "Numerical Investigation of the Performance of a Geosynthetic Reinforced Soil-Integrated Bridge System (GRS-IBS) under Working Stress Conditions," presented at the International Foundation Congress and Equipment Expo Conference, IFCEE 2018, Orlando, Florida, March 5-10.
65. Souri A., **Abu-Farsakh M.**, and Voyiadjis G., 2018 "Effect of Pile Spacing on the Static Lateral Behavior of Vertical and Battered Pile Groups," presented at the International Foundation Congress and Equipment Expo Conference, IFCEE 2018, Orlando, Florida, March 5-10.
66. **Abu-Farsakh, M.**, and Haque, Md. N., 2018 "Estimation and Incorporation of Pile Setup into LRFD Design Methodology," presented at the 97th TRB annual meeting, Washington, D.C.
67. **Abu-Farsakh, M.**, Saghebfar, M. Hanandeh, S. and Chen, Q., 2018 "Quantifying the Benefits of Geosynthetics Reinforcement in Flexible Pavement Design Using Cyclic Plate Load Testing," presented at the 97th TRB annual meeting, Washington, D.C.
68. **Abu-Farsakh M.**, Ardah A., and Voyiadjis G., 2018 "Numerical Investigation of the Performance of Geosynthetic 1 Reinforced Soil-Integrated Bridge System (GRS-IBS) Subjected to Differential Settlement," presented at the 97th TRB annual meeting, Washington, D.C.

69. Haque Md. N., **Abu-Farsakh M.**, and Nickel C., 2017, "A Field Study to Analyze Pile Setup Behavior and Comparison of Pile Capacity Methods from CPT," Presented at the 42nd DFI Annual Conference, New Orleanse, Oct 24-27.
70. **Abu-Farsakh M.**, Saghebfar M, Ardah A., and Chen Q. 2017 "Instrumenting and Monitoring the Performance of Geosynthetic Reinforced Soil Integrated Bridge System" presented at the CESARE'17 (Coordinating Engineering for Sustainability and Resilience) conference, Dead Sea, Jordan.
71. **Abu-Farsakh M.**, Saghebfar M, Ardah A., and Chen Q. 2017 "Estimating the Increase in Pile Resistance with Time (or Setup) Based on Soil Properties" presented at the CESARE'17 (Coordinating Engineering for Sustainability and Resilience) conference, Dead Sea, Jordan.
72. **Abu-Farsakh M.**, Saghebfar M, and Ardah A., 2017 "Monitoring the Performance of Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS) at Maree Michel Bridge Site" presented at Geo3T2 conference, April 11-12, Raleigh – Durham, NC.
73. **Abu-Farsakh M.**, Saghebfar M, Ardah A., and Chen Q. 2017 "A Case Study on Evaluating the Performance of Geosynthetic Reinforced Soil Integrated Bridge System (GRS-IBS)" presented at Geo-Frontiers 2017, Orlando, FL.
74. **Abu-Farsakh M.**, and Haque M. N. 2017 "Development of Empirical Models to Estimate the Increase in Pile Resistance (Set-Up) with Time" presented at Geo-Frontiers 2017, Orlando, FL.
75. **Abu-Farsakh M.**, Haque Md. N., Tavera E. and Zhang Z, 2017 "Evaluation of Pile Setup from Osterberg Cell Load Tests and Its Cost-Benefit Analysis," presented at the 96th TRB annual meeting, Washington, D.C.
76. **Abu-Farsakh M.**, Fortier A., Haque Md. N., Chen Q., and Yu X., 2017 "Calibration of Resistance Factors for LRFD of Drilled Shafts Using 2010 FHWA Design Method," presented at the 96th TRB annual meeting, Washington, D.C.
77. Haque Md. N., **Abu-Farsakh M.**, Tsai C., Rauser J., and Zhang Z., 2017 "New Approach for Estimating Pile Setup Using the Combination of Power Function and Log-linear Setup Models," presented at the 96th TRB annual meeting, Washington, D.C.
78. **Abu-Farsakh M.**, 2017 "Instrumentation of Granular Materials for Applications to Pavement Base and Subbase Layers and Backfill for GRS-IBS," presented at the 96th TRB annual meeting, Washington, D.C.
79. Saghebfar M., **Abu-Farsakh M.**, Ardah A., Chen Q., and Fernandez B., 2017 "Full-Scale Testing of Geosynthetic-Reinforced Soil Integrated Bridge System," presented at the 96th TRB annual meeting, Washington, D.C.
80. **Abu-Farsakh M.**, Hanandeh S., Chen Q., and Mohammad L., 2017 "Performance Evaluation of Geosynthetic-Reinforced Flexible Pavement Using Full-Scale Accelerated Loading Test," presented at the 96th TRB annual meeting, Washington, D.C.
81. **Abu-Farsakh M.**, and Ardah A., 2016 "Evaluating the Resilient Modulus of Treated Very Weak Subgrade Soils for Sustainable Pavement," presented at the 6th Annual International Conference on Civil Engineering, Athens, Greece, June 2016.
82. Hanandeh S., **Abu-Farsakh M.**, Chen Q., and Saghebfar M., 2016 "Full-Scaled Accelerated Load Testing of Geosynthetics Reinforced/Stabilized Paved Roads built over Native Soft Subgrade," presented at the 3rd Pan-American Conference on Geosynthetics, Geo_America 2016, Miami, Florida, April 2016.

83. **Abu-Farsakh M.**, and Chen Q., 2016 "Mitigating the Bridge End Bump Problem: A Case Study of a New Approach Slab System with Geosynthetic Reinforced Soil Foundation," presented at the 2nd International Conference and Expo on Smart Materials and Structures, Philadelphia, Pennsylvania, March 2016.
84. **Abu-Farsakh, M.**, Pant, R., Haque, Md. N., 2016 "Correlation of consolidation parameters (M and OCR) of cohesive soils with PCPT data," presented at the 95th TRB annual meeting, Washington, D.C.
85. Haque, Md. N., **Abu-Farsakh, M.**, Chen, Q., and Okeil, A., 2016 "Evaluate set-up for individual soil layers and develop a model to estimate the increase in unit side resistance with time based on PCPT data," presented at the 95th TRB annual meeting, Washington, D.C.
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Developed Softwares

Responsible for the development of several visual basic computer softwares aimed at implementing the Cone Penetration Test (CPT) technology in many geotechnical engineering applications. These softwares are:

1. Classification by Cone Penetration Test (LSC-CPT): Five CPT soil classification systems were implemented in this software, the probabilistic region estimation method, the fuzzy classification method, the Schmertmann, the Douglas and Olsen, and the Robertson et al. methods.
2. Louisiana Pile Design by CPT (LPD-CPT): three CPT pile design methods were implemented in this software, De Ruiter and Beringen method, LCPC method, and Schmertmann method.
3. Estimation of Embankment Settlement from CPT: this software will first estimate the soil's consolidation parameters from the piezocone penetration and dissipation tests, which are then used to calculate the embankment settlement.

The first two softwares can be downloaded for free from the LTRC website at (www.ltrc.lsu.edu/downloads.html).