



Mohamed Khalafalla Ahmed, Ph.D.

Associate Professor

Florida A&M University - Division of Construction Engineering Tech.

Tallahassee, Florida 32307

(423) 314-2046 • mohamed.ahmed@famu.edu • moh.khalafalla@gmail.com



EDUCATION

M.S., Law , Northwestern University	June 2025
Ph.D., Civil Engineering, Construction Management , Auburn University	May 2019
M.S., Civil Engineering , The University of Tennessee at Chattanooga	Aug. 2015
M.B.A , University of Khartoum - Business Administration	Apr. 2013
B.S., Civil Engineering , University of Khartoum	Dec. 2010

CERTIFICATIONS & PROFESSIONAL DEVELOPMENT

• Project Management Professional (PMP), PMI	Apr 2014
• OSHA - 10-Hour Course, OSHA	Mar 2015

EMPLOYMENT HISTORY

Faculty , Florida A&M University	2020 – Pres.
<i>Associate Professor (Fall 2025– Pres.)</i>	
<i>Assistant Professor (Fall 2020- Spring 2025)</i>	
• Teach Construction Management practical topics and sustainable construction, • Conduct research on Transportation, Energy, and minority student success in STEM fields • Participate in committees including hiring new faculty, student advisement and new building projects.	
Postdoctoral Scholar , Dept. of Civil Engineering, Auburn University	2019 – 2020
• Conducted research and analysis of NCHRP 10-101 projects. Developed cost forecasting toolkit and guidebook for use by state transportation agencies that better accounts for cost variability and economic volatility over time. Published results of the NCHRP Report 953.	
Graduate Research Assistant , Dept. of Civil Engineering, Auburn University	2017 - 2019
• Conducted Research on project delivery methods used in public transportation infrastructure projects and published finding in conferences and journals	
CAD Engineer of Real Estate , EMJ Corporation, Chattanooga, Tennessee	2015 - 2017
• Led engineering efforts and ensured compliance for commercial development project. • Created 2D site plans and utilized SIRs to estimate costs for commercial retailers.	
Graduate Research Assistant , University of Tennessee Chattanooga	2013 - 2015
• Worked on two TDOT research Projects: Self Consolidated Concrete (SCC), and measuring marking reflectivity.	
Civil Engineer , Asawer Oil & Gas, Khartoum, Sudan	2013 - 2013
• Part the civil design of Bajrawia Factory for Oil & Gas equipment in Sudan. • Designed concrete buildings and equipment foundations while preparing Bill of Quantities for bidding.	
Project Engineer , Murtada Maaz Consultancy, Khartoum, Sudan	2012 - 2013
• Coordinated the work between different specialty contractors in the project and measured their progress in the new Cabinet Office in Khartoum, Sudan.	
Teaching Assistant , University of Khartoum, Khartoum, Sudan	2010 - 2011

RESEARCH AND SCHOLARLY CONTRIBUTIONS

Referred journals:

- 19 Md. Talha Mohsin, Ismail Abdulrashid, Dursun Delen & **Mohamed Khalafalla** (2026). Explainable AI and decision analytics for early disease detection: a systematic synthesis of healthcare information systems. Annals of Operations Research, doi: 10.1007/s10479-026-07386-5
- 18 Ismail Abdulrashid, **Mohamed Khalafalla**, Shamkhal Mammadova, Dursun Delen & Jiu-Bing Sheu (2026). Explainable AI for Investment Risk Forecasting. Journal of Computer Information Systems, doi: 10.1080/08874417.2026.2714909
- 17 Malik Dongla, **Mohamed Khalafalla**, Noon Dongla & Ahmed A. Suliman (2026). Modeling policy and resource dynamics in construction: a hybrid system dynamics–genetic algorithm framework for a fragile economy (Sudan case). International Journal of Construction Management, DOI:10.1080/15623599.2026.2655816
- 16 Ismail Abdulrashid, Mohsin, M. T., **Mohamed Khalafalla**, & Delen, D. (2026). A Decision-Centered Assessment of Explainable AI in Transport Logistics. Journal of Computer Information Systems, 1–28. <https://doi.org/10.1080/08874417.2026.2648967>
- 15 Ismail Abdulrashid, **Mohamed Khalafalla**, Nikhil Sarma Kadiyala, and Wen-Chyuan Chiang (2026). AI-driven decision support for disaster management and humanitarian logistics: Models, applications, and research challenges. Transportation Research Part E: Logistics and Transportation Review, doi: 10.1016/j.tre.2026.104821.
- 14 Shamkhal Mammadov, Ismail Abdulrashid, **Mohamed Khalafalla** & Dursun Delen (2025). Identifying Factors Influencing Box-Office Success of Motion Pictures with XAI. Journal of Computer Information Systems, doi: 10.1080/08874417.2025.2579532
- 13 **Mohamed Khalafalla**, Tejal Mulay, & Doreen Kobelo (2025). Empowering Underrepresented High School Students in STEM through Hands-On Engineering Technology Summer Camps. IEEE Transactions on Education, vol. 68, no. 5, pp. 426-434, Oct. 2025, doi: 10.1109/TE.2025.3588709.
- 12 Ismail Abdulrashid, Reza Zanjirani Farahani, Shamkhal Mammadov, & **Mohamed Khalafalla** (2025). Transport Behavior and Government Interventions in Pandemics: A Hybrid Explainable Machine Learning for Road Safety. Transportation Research Part E: Logistics and Transportation Review, 193, 103841.
- 11 Ismail Abdulrashid, Reza Zanjirani Farahani, Shamkhal Mammadov, **Mohamed Khalafalla** & Wen-Chyuan Chiang (2024). Explainable Artificial Intelligence in Transport Logistics: Risk Analysis for Road Accidents. Transportation Research Part E: Logistics and Transportation Review, doi: 10.1016/j.tre.2024.103563.
- 10 Ismail Abdulrashid, Ibrahim Said Ahmad, Aminu Musa & **Mohamed Khalafalla** (2024). Impact of social media posts' characteristics on movie performance prior to release: an explainable machine learning approach. Electronic Commerce Research, <https://doi.org/10.1007/s10660-024-09852-3>
- 9 Jorge Rueda-Benavides, Douglas Gransberg, **Mohamed Khalafalla** & Cesar Mayorga (2024). Probabilistic cost-based decision-making matrix: IDIQ vs. DBB contracting, Construction Management and Economics, 42(1), pp.1-15, DOI: 10.1080/01446193.2023.2226261
- 8 **Mohamed Khalafalla**, Tejal Mulay and Shonda L Bernadin (2023). Factors Influencing Change Orders in Horizontal Construction Projects: A Comparative Analysis of Unit Price and Lump Sum Contracts. Tr Civil Eng & Arch 4(4)- 2022. TCEIA.MS.ID.000192. DOI: 10.32474/TCEIA.2023.04.000192
- 7 Jorge Rueda-Benavides, **Mohamed Khalafalla**, Maria Miller & Douglas Gransberg (2023). Cross-asset prioritization model for transportation projects using multi-attribute utility theory: a case study International journal of construction management, 23(16), pp.2746-2755, DOI: 10.1080/15623599.2022.2092811.
- 6 Karthik Pakalapati, **Mohamed Khalafalla**, and Jorge Rueda-Benavides (2022). Using moving-window cross-validation algorithm to optimize bid-based cost estimating data usage, International Journal of Construction Management, 22(15), pp.2855-2863, <https://doi.org/10.1080/15623599.2020.1827694>
- 5 Kaylyn Cardinal, **Mohamed Khalafalla**, and Jorge Rueda-Benavides (2021). A Protocol to Assess the Impact of Crude Oil Price Fluctuations on Future Asphalt Prices, Transportation Research Record, Transportation Research Record. March 2021. doi:10.1177/0361198121992072

- 4 **Mohamed Khalafalla** and Jorge Rueda-Benavides (2020). *A Methodology to Assess the Impact of Lump Sum Compensation Provisions on Project Schedules*, ASCE Journal of Management in Engineering, 36(4), p.04020028, [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000786](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000786)
- 3 Serhat Simsek, Mehmet Gumus, **Mohamed Khalafalla**, and Issa Tahir Bachar (2020). *A Hybrid Data Analytics Approach for High-Performance Concrete Compressive Strength Prediction*, Journal of Business Analytics, 3(2), pp.158-168, <https://doi.org/10.1080/2573234X.2020.1760741>
- 2 **Mohamed Khalafalla** and Jorge Rueda-Benavides (2018). *Unit Price or Lump Sum? A Stochastic Cost-Based Decision Making Tool for Design-Bid-Build Projects*, Transportation research record, 2672(26), pp.11-20, DOI 1177/0361198118758052.
- 1 Joseph Owino, Ignatius Fomunung, and **Mohamed Khalafalla** (2014). *The Recent Development in the Roller Compacted Concrete*, BIE Journal of Engineering and Applied Sciences, Volume 5 Issue 2, pp 42-49.

Conference proceedings:

- 26 Behnam Shadravan, Doreen Kobelo Regalado, **Mohamed Khalafalla**, Tejal Mulay, Leon I Prosper, Chao Li, David Akinsanya, *A Case Study of The Education Changes Post-Covid Pandemic on African American Students*, 2026 ASEE Annual Conference, Charlotte, NC, June 21-24, 2026.
- 25 Ian Fletcher and **Mohamed Khalafalla**, *Integrating Climate Anxiety and Environmental Responsibility into Architectural Technology and Engineering Technology Curricula at an HBCU*, 2026 ASEE Annual Conference, Charlotte, NC, June 21-24, 2026.
- 24 Jorge Rueda-Benavides, **Mohamed Khalafalla**, Douglas D. Gransberg, and Abdallah Alsammani. *A Methodology for Sustainable Management of Construction Equipment Fleets: Estimating Emissions and Enhancing Environmental Performance*, Construction Research Congress, San Antonio, TX, March 2026
- 23 Ann Ubaka, Abdallah Alsammani, **Mohamed Khalafalla**, and Doreen Kobelo Regalado. *Construction Work Zone Safety: Identifying Critical Crash Factors and Patterns in Florida*, Construction Research Congress, San Antonio, TX, March 2026
- 22 Malik Dongla and **Mohamed Khalafalla**, *Modeling Policy and Resource Dynamics in the Construction Sector of Developing Countries: A System Dynamics Approach Using Sudan as a Case Study*, Transportation Research Board 105th Annual Meeting, Washington, D.C., Jan. 11-15, 2026.
- 21 **Mohamed Khalafalla**, Tejal Mulay, Doreen Kobelo, Behnam Shadravan, Kyle Spence, *Decarbonization Education for K-12: A Pilot Study on Transforming Student Perceptions and Career Trajectories in Clean Energy*, 2025 ASEE Annual Conference, Montreal, Canada, June 22-25, 2025.
- 20 **Mohamed Khalafalla**, Tejal Mulay, Doreen Kobelo, *Empowering Educators: A Pilot Study of Faculty Training on Building Decarbonization and Clean Energy Integration*, 2025 ASEE Annual Conference, Montreal, Canada, June 22-25, 2025.
- 19 Tejal Mulay, **Mohamed Khalafalla**, Doreen Kobelo, *Pilot Study: From Curiosity to Career- The Influence of a Summer Camp on High School Students' Interest in Transportation and STEM Careers*, 2025 ASEE Annual Conference, Montreal, Canada, June 22-25, 2025.
- 18 Doreen Kobelo, **Mohamed Khalafalla**, Tejal Mulay, *Assessing the Impact of Internships on Undergraduate Students' Academic Success: A Case Study of Engineering Technology and Related Programs*, 2025 ASEE Annual Conference, Montreal, Canada, June 22-25, 2025.
- 17 Tatiana Deslouches, Doreen Kobelo, **Mohamed Khalafalla** and Tejal Mulay, *Preliminary Analysis of Construction Work Zone on Roadways in Florida by Crash Severity*, Transportation Research Board 104th Annual Meeting, Washington, D.C., Jan. 5-9, 2025.
- 16 Demayla Jenkins, Janeroza Matyenyi, Thobias Sando, Doreen Kobelo and **Mohamed Khalafalla**, *Bridging the Gap: Understanding Rural Commuting Patterns and Transportation Choices*, Transportation Research Board 104th Annual Meeting, Washington, D.C., Jan. 5-9, 2025.
- 15 **Mohamed Khalafalla** and Jorge Rueda-Benavides. *Value for Money Based Project Selection Framework using Multi-Attribute Utility Theory*, Construction Research Congress, Des Moines, IA, March 2024.
- 14 Kaylyn Cardinal, **Mohamed Khalafalla** and Jorge Rueda-Benavides. *Development of a Stochastic Risk Assessment Protocol for Analyzing the Impact of Fluctuations in Crude Oil and Fuel Prices on Asphalt Prices in the State of Alabama*, Construction Research Congress, Des Moines, IA, March 2024.

- 13 Tejal Mulay, **Mohamed Khalafalla** and Shonda L Bernadin. Acoustic Emotion Recognition for Improved Safety in the Construction Industry, Construction Research Congress, Des Moines, IA, March 2024.
- 12 Jayson Francois, **Mohamed Khalafalla**, Doreen Kobelo, and John Williams. Preventing Drowsy Driving Accidents in Construction Industry Using Computer Vision and Convolutional Neural Networks, Construction Research Congress, Des Moines, IA, March 2024.
- 11 Deyana Thomas, Doreen Kobelo, and **Mohamed Khalafalla**. Has the Increase of Vehicle Automation Affected Truck Lane Restriction?, Transportation Research Board 103rd Annual Meeting, Washington, D.C., TRBAM-24-00818, Jan. 7-11, 2024.
- 10 **Mohamed Khalafalla**, Tejal Mulay, Doreen Kobelo, Behnam Shadravan, The Role of Hands-On Engineering Technology Summer Camps in Attracting Underrepresented High School Students to STEM Majors, 2023 ASEE Annual Conference & Exposition, Baltimore, MD, June 25-28, 2023.
- 9 Tejal Mulay, **Mohamed Khalafalla**, Behnam Shadravan, Effects of Distance Learning on African- American Students in Engineering Technology Courses During COVID-19 Pandemic, 2023 ASEE Annual Conference & Exposition, Baltimore, MD, June 25-28, 2023.
- 8 Kaylyn Cardinal, **Mohamed Khalafalla** and Jorge. Rueda-Benavides, Methodology for Evaluating the Effects of Fuel Price Fluctuations on Asphalt Prices, Transportation Research Board 102nd Annual Meeting, Washington, D.C., TRBAM-23-00461, Jan. 8-12, 2023.
- 7 Jayson Francois, **Mohamed Khalafalla**, Doreen Kobelo, Cost-Duration-Based Project Selection Framework: A Multi-Attribute Utility Theory Model, Transportation Research Board 101st Annual Meeting, Washington, D.C., TRBAM-22-01167, Jan. 9-13, 2022.
- 6 **Mohamed Khalafalla**, Kaylyn Cardinal, Jorge Rueda-Benavides and Mazin Karim, Modified Version of the Cumulative Sum Statistical Analysis Method, 2021 International Conference on Innovation and Intelligence for Informatics, Computing, and Technologies (3ICT), 2021, pp. 12-17, doi: 10.1109/3ICT53449.2021.9581845.
- 5 Laura Arevalo, **Mohamed Khalafalla**, Jorge A. Rueda, Jose Vasconcelos, and Wesley Donald. Regional Modeling of the Variability of Riprap Prices in Alabama: A Riprap Location Cost Index, Construction Research Congress, Phoenix, AZ, March 2020.
- 4 Kaylyn Cardinal, **Mohamed Khalafalla** and Jorge. Rueda-Benavides, A Protocol to Assess the Impact of Crude Oil Price Fluctuations on Future Asphalt Prices, Transportation Research Board 99th Annual Meeting, Washington, D.C., TRB Paper No. 20-05704, Jan. 12-16, 2020.
- 3 **Mohamed Khalafalla** and Jorge. Rueda-Benavides. Unit Price or Lump Sum? A Stochastic Cost-Based Decision-Making Tool for Design-Bid-Build Projects, Transportation Research Board 97th Annual Meeting, Washington, D.C., TRB Paper No. 18-00498, Jan. 7-11, 2018.
- 2 Amna Salman, and **Mohamed Ahmed**. Implementing Active Learning Strategies in a Structural Analysis and Design Course: Pedagogy Development and Lessons Learned, Proceedings of the 11th Annual International Conference of Education, Research and Innovation, Seville, Spain, November 12-14, 2018. doi: 10.21125/iceri.2018.2715
- 1 **Mohamed Khalafalla** and Joseph Owino. The Effects of Visual Stability Index on Fresh and Hardened Properties of Self Consolidating Concrete under Accelerated Curing Condition. EURO-MED-SEC-1; Istanbul, May 24-29, 2016. doi: 10.14455/ISEC.res.2016.54

Conference presentations:

- 4 Tejal Mulay and **Mohamed Khalafalla** “Use of ChatGPT in assignments: Student Perception, Performance, and Learning”, Florida A&M University Empower Virtual Conference, May 7, 2024.
- 3 **Mohamed Khalafalla**. “Enhancing Learning in Junior-Level Structures Courses for Architecture Students at HBCUs through Hands-On Activities and AI Tools”, 2024 EERA Annual Conference, Clear Water, FL, February 8 -9, 2024.
- 2 **Mohamed Khalafalla**. “Integrating Hands-On Activities for Enhanced Architectural Learning”, SoTL Commons Conference 2024, Savannah, GA, February 28 - March 1, 2024.
- 1 **Mohamed Khalafalla** and Tejal Mulay “Effects of Distance Learning on African-American Students in Engineering Technology Courses During COVID-19 Pandemic”, Florida A&M University Empower Virtual Conference, May 9, 2023.

Technical | Final reports submitted to funding agencies:

- Joseph O. Owino, Benjamin E. Byard, **Mohamed Khalafalla Ahmed**, Alex B. Rollins (2016). *Final Report: Development of Class P-SCC (Self-Consolidating Concrete) and Class A-SCC Concrete Mixtures (No. RES2013-39)*, to Tennessee Department of Transportation (TDOT)

GRANTS: FUNDED PROJECTS AND PARTICIPATION:**External Grants:**

- PI: National Science Foundation, Historically Black Colleges and Universities Excellence in Research Planning Grant, "Planning: Interdisciplinary Research Framework for Advancing Energy Efficiency in Housing," recommended for award, September 2026–August 2027. \$99,420.
- PI: Department of Energy, HBCU Clean Energy Education Prize, Partnership (Phase 2), Nov. 2024-2029. \$400,000
- PI: Department of Energy, HBCU Clean Energy Education Prize, Inspire Track (Phase 2) August 2024. \$10,000
- PI: Department of Energy, HBCU Clean Energy Education Prize, Partnership (Phase 1), February 2024. \$100,000
- PI: Department of Energy, HBCU Clean Energy Education Prize, Inspire Track (Phase 1) October 2023. \$40,000
- PI: AASHTO Commuting in America; Rural Commute Patterns, September 2022 to August 2023. \$20,000
- CoPI: Dwight David Eisenhower HBCU Fellowship Program 2022-2023. Funding by the Federal Highway Administration, December 2021 to September 2022. \$25,500
- NCHRP 10-101 Improving Mid-Term, Intermediate, and Long-Range Cost Forecasting, May 2018 to April 2020.
- NCHRP Project 08-112 Guidebook for Implementing Alternative Technical Concepts, June 2017 to March 2019.
- Retrace Pavement Marking Retro-reflectivity levels in Tennessee Highways, Funded by the Tennessee Department of Transportation (TDOT), August 15, 2013 to July 31, 2018. \$199,526,38
- Development of Class P-SCC (Self-Consolidating Concrete) and Class A-SCC Concrete Mixtures, Funded by Tennessee Department of Transportation (TDOT), June 1, 2013 to March 31, 2016. \$142,451.09

Internal Grants:

- PI: SAET AI-Integrated Teaching and Learning Research Idea program the 2023-2024 academic year, "Revolutionizing Architectural Structures Education and Research: Integrating ChatGPT for Enhanced Learning and Paper Writing", \$1,000.
- PI: FAMU FRAP Award the 2022-2023 academic year, "FRAP-Hypothesis of the relationship between fuel and asphalt prices", \$5,000.

AWARDS & RECOGNITIONS

• FAMU – SAET Service Excellence award	May 2024
• FAMU Teaching Innovation Award	May 2024
• U.S. Department of Energy Explorer Award for Advancing Energy Entrepreneurship	April 2024
• Auburn University Graduate Fellowship	Jan 2017
• SGA Graduate Assistant Award - The University of Tennessee at Chattanooga	Apr 2015
• The University of Tennessee at Chattanooga Graduate Fellowship	Aug 2013

TEACHING RESPONSIBILITIES

BCN 3797 – Construction Management I	BCN 3701 – Construction Management II
BCN 3939 – Construction Management Capstone Project	ETG 2530L – Strength of Materials Lab
BCN 2230 – Materials & Methods of Construction I	BCN 2231 – Materials & Methods of Construction II
ETG 2502 – Statics	ETG 2530 – Strength of Materials I
ARC 2501 – Architectural Structures I	ARC 3551 – Architectural Structures II
TTE 3004 – Transportation Engineering	BCN 4782 – Computer Applications in CM

PROFESSIONAL SOCIETY MEMBERSHIP & SERVICE

- **Journal and Conference Reviewer**
 - Reviewer, Engineering, Construction and Architectural Management (2021-present)
 - Reviewer, ASCE Construction Research Congress Conference (2019-present)
 - Reviewer, ASEE Annual Conference & Exposition (2024 – present)
 - Reviewer, TRB Construction Committee, AFH15 (2019-present)
 - Reviewer, International Journal of Construction Management (2019 – present)
- **American Society of Civil Engineers**
 - Committee Member, Southeast Student Conference (2015)
- **Project Management Institute**
 - Member, Tallahassee Chapter (2021 - present)
- **University and Academic Service**
 - Faculty Contributor, ABET Accreditation for B.S. in Facilities Management Program at FAMU (2025)
 - Member, FAMU SAET Architecture Faculty Search Committee (2022-2024)
 - Member, FAMU SAET Grade Grievance Committee (Spring 2024 & Spring 2025)
 - Faculty advisor for National Association of Minority Contractors (NAMC) student chapter at FAMU-SAET (2022-present).
 - Participated in the preparation and collection of materials for the ABET accreditation report for the Construction Engineering Technology Program (2021 and 2027)
 - Advisor, TRB Minority Fellowship Program (2021-present)
 - Organized and taught high school summer camps: EmpowerEd Clean Energy Camp funded by DOE (Summer 2024) and National Summer Transportation Institute (NSTI) funded by FDOT (Summer 2024)
 - Organized and participated in various STEM-related activities at FAMU, including STEM Day and VEX Robotics competitions for K-12 students (2021-present)
 - Member, Moustafa Elsayed Ph.D. Committee, Construction Engineering, FAMU-FSU College of Engineering (2024-present)