

Fadi Alhomaiddat, PhD

Associate Professor in Civil Engineering
Director of Academic Development and Quality Assurance Center
Certified Quality Assessor for Higher Education Institutions
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SHORT BIOGRAPHY

Civil Engineer and Transportation Systems specialist with over ten years of university teaching and research experience. Expertise in transportation engineering, infrastructure systems, pavement materials, and quantitative modelling. Experienced in delivering undergraduate civil engineering modules aligned with professional accreditation frameworks. Active researcher with publications in high-quality peer-reviewed journals and experience supervising undergraduate and postgraduate research projects. Committed to inclusive, high-quality engineering education within international academic environments.

EDUCATION

WESTERN MICHIGAN UNIVERSITY, Michigan, USA.

Ph.D. of Civil Engineering, May 2019

- Research topic: "Impact of Freeway Speed Limit on Safety and Operation Speed of Adjacent Arterial Roads."

UNIVERSITY OF TEXAS AT ARLINGTON, Texas, USA.

Master of Civil Engineering, May 2015

- Research topic: "Application of moving observer method for estimation of speed and traffic flow in the DFW region in 2015."

MUTAH UNIVERSITY, Mutah, Al-Karak

B.S. in Civil Engineering, Jan 2011

- Senior project: "Improve soil stabilization for base and sub-base road by using chemical material."

Academic Appointments

Associate Professor

Nov 2023 – Present

- *Department of Civil Engineering, Al-Hussein Bin Talal University.*

Assistant Professor

Jul 2019 – Nov, 2023

- *Department of Civil Engineering, Al-Hussein Bin Talal University.*

Chair of Civil Engineering Department

Sep 2020 – Sep 2022

- *Department of Civil Engineering, Al-Hussein Bin Talal University.*

Dean Assistant for Quality Assurance

Sep 2023 – Sep 2025

- *College of Engineering, Al-Hussein Bin Talal University.*
- *Member of the Higher Committee for Qualifications Placement, Al-Hussein Bin Talal University, under the National Qualifications Framework.*
- *Chairman of the Engineering Programs Placement Committee, responsible for ensuring the alignment of program learning outcomes with course learning outcomes in accordance with the Jordanian National Qualifications Framework (JNQF).*

Director of Academic Development and Quality Assurance Center

Sep 2025 – Present

- Led faculty development and professional training initiatives.
- Managed institutional and program accreditations (national and international).
- Oversaw the opening, review, and closure of academic programs.
- Developed and monitored university strategic plans.
- Prepared annual university academic and quality reports.
- Coordinated university ranking data, benchmarking, and improvement plans.
- Established and updated academic and quality assurance policies.
- Promoted a culture of quality, assessment, and continuous improvement.

TEACHING EXPERIENCE

- Transportation Engineering
- Traffic Engineering
- Transportation Planning
- Highway Geometric Design
- Materials and Pavement Design
- Probability and Engineering Statistics
- Engineering Economy
- Computer Applications in Civil Engineering

Teaching Contributions

- o Developed and updated course syllabi aligned with national qualifications frameworks
- o Designed assessment strategies including coursework, exams, and project-based evaluation
- o Integrated simulation tools and data-driven approaches into engineering modules
- o Contributed to curriculum review and programme development
- o Delivered student-centred and outcome-based instruction
- o Provided academic advising and supervision

SUPERVISION

Master's Supervision

- **Main Advisor** Master thesis: Sajedah Alosifat, "Utilizing Phosphate Mine Waste Rocks as Natural Aggregate in Asphalt Mixture: A Case Study from Jordan", July 2023
- **Co-Advisor** Master thesis: Rahaf Zakaria, "Enhancing Pedestrian Safety in Aqaba, Jordan with an Innovative Bollard Enhancing PedestSystem: A Statistical and Numerical Analysis," Nov 2024
- **Co-Advisor** Master thesis: Aseel Alhmadeen, "Developing a safety Performance Function for Multilane highways: A Case study of Amman's Traffic Conditions," Nov 2025

Undergraduate Supervision

- Multiple senior design and applied civil engineering projects (2019–2025)

AREAS OF INTEREST:

- o Motorized and non-motorized traffic safety, simulation and operations
- o Application of intelligent transportation systems
- o GIS application in transportation engineering
- o Travel behavior and forecasting (Macroscopic level),
- o Machine learning applications in transportation engineering
- o Sustainability in transportation and civil engineering

JOURNAL PAPERS

- Mousa Abushattal, Mohammad Nour Al-Marafi, Rasha Al-Shamaseen, **Fadi Alhomaidat**, Fareh Abudawaba, Ahmed Jaber (2026) Modeling Crash Injury Severity for Vulnerable Road Users Using CatBoost and SHAP: Uncovering Complex Risk Interactions. *Vehicles* 2026, 8(8), 173; <https://doi.org/10.3390/vehicles8080173>
- Abushattal, M., **Alhomaidat, F.**, Al-Shamaseen, R., Al-Marafi, M., Alkodary, L., & Jaber, A. (2026). Temporal Optimization of Dynamic Message Signs: A Survival Analysis of Driver Comprehension Factors. *Vehicles*, 8(3). <https://doi.org/10.3390/vehicles8030050>
- **Alhomaidat, F.**, Alhadidi, T., Eljufout, T., Abushattal, M., Al-Bayati, A.J.(2026). Investigating Travel Behavioral Changes throughout 10 Years: A Case Study on Southeast Michigan. *Journal of Urban Planning and Development* 152 (1), 04025086
- Salah, A., Shalby, M., Al-Soeidat, M., & **Alhomaidat, F.** (2025). Electric Vehicle Charging Infrastructure with Hybrid Renewable Energy: A Feasibility Study in Jordan. *World Electric Vehicle Journal*, 16(10), 557.
- Abushattal, M., **Alhomaidat, F.**, & El-Yabroudi, M. (2025). Effects of intersection control types on driver yielding behavior to cyclists using mixed logit modeling. *Scientific Reports*, 15(1), 1-14.
- Abushattal, M. A., **Alhomaidat, F.**, Alsanat, H., Kwigizile, V., & Mwende, S. I. (2025). Driving Economic Value: Assessing the Financial Impact of Dynamic Message Signs on Freeways. *Civil Engineering Journal*, 11(7), 3039-3054.
- Abushattal, M., & **Alhomaidat, F.** (2025). Factors Associated with Travel Time Accuracy of Dynamic Message Signs for Route Choice. *Future Transportation*, 5(2), 53.
- **Alhomaidat, F.**, Al-Tarawneh, M. A., Abushattal, M., & Al-Alaya, R. (2025). Impact of Wind Turbine Distraction on Crash Severity: Assessment and Prediction Study. *Civil Engineering Journal*, 11(04).
- **Alhomaidat, F.**, Al-Kheetan, M. J., & Alosifat, S. M. (2025). Recycling phosphate mine waste rocks in asphalt mixtures to fully replace natural aggregate: A preliminary study. *Results in Engineering*, 25, 104324.
- Al-Bayati, A., Ali, M., **Alhomaidat, F.**, Bandra, N., Chen, Y., (2024) The Effects of Temporary Portable Rumble Strips on Vehicle Speeds in Road Work Zones, *Safety*, 105
- Hasan, Raed., Alhomaidat, F., Albdour, M. (2024) Social norms and perceptions of Saudies on active transportation, *Frontiers in Built Environment*, 10
- Eljufout, Tamer., **Alhomaidat, F.**, (2024) Utilizing waste rocks from phosphate mining in Jordan as concrete aggregates, *Results in Engineering*, 22, 102350
- Al-Tarawneh, Mu'ath., **Alhomaidat, F.**, Twaissi, M., (2024) Unlocking insights from commercial vehicle data: A machine learning approach for predicting commercial vehicle classes using Michigan State data (1999–2017), *Results in Engineering*, 21, 101691
- AlTawaiha, H., **Alhomaidat, F.**, Eljufout, T., (2023) A Review of the Effect of Nano-Silica on the Mechanical and Durability Properties of Cementitious Composites, *Infrastructure* 8(9), 132
- Albdour, M., **Alhomaidat, F.**, Alrsai, M., Alsanat, H., Al-Zaidyeen, S., (2023) Proposal for Zero Energy Housing Prototypes in Jordan, *Energy, Sustainability and Society*
- **Alhomadiat, F.** Hasan, R., Eljufout, T., Abbas, H., (2023) User's perceptions of electric, hybrid, and fuel-powered vehicles in Iraq and Jordan, *Case Studies on Transport Policy*, 12, 101004
- Eljufout, T., Hadadin, N., Haddad, A., **Alhomaidat, F.**, (2023) Correlation models for utilising rebound hammer technique in evaluating weathered limestone walls, *Australian Journal of Structural Engineering*, 24(1), 77-78
- **Alhomaidat, F.**, Hasan, R.Hananadeh, S., and Alhajyaseen, W. (2023) Using driving simulator to study the effect of crash fact signs on speeding behaviour along freeways. *International journal of injury control and safety promotion*, 30(1), 15-25
- Albdour, M. S., Shalby, M., Salah, A. A., & **Alhomaidat, F.** (2022). Evaluating and Enhancing the Energy Efficiency of Representative Residential Buildings by Applying National and International Standards Using BIM. *Energies*, 15(20), 7763.
- Hanandeh, S., Khelifat, I., Hanandeh, R., & **Alhomaidat, F.** (2022). Modeling the Free Flow Speed and 85th Percentile Speed Using Artificial Neural Network (ANN) and Genetic Algorithm.
- Hasan, R., Irshaid, H., **Alhomaidat, F.**, Lee, S., Oh, Jun-Seok, (2022) Transportation Mode Detection by Using Smartphones and Smartwatches with Machine Learning, *KSCE Journal of Civil Engineering*.

- **Alhomaidat, F.**, Abushattal, M., Kwayu, K., Kwigizile V., (2022) Investigating the interaction between age and liability for crashes at stop-sign-controlled intersections, *Transportation Research Interdisciplinary Perspectives*.
- Eljufout, T., and **Alhomaidat, F.**, (2021) Evaluation of natural building stones' characterizations using ultrasonic testing technique, *Arabian Journal for Science and Engineering*,
- **Alhomaidat, F.**, and Eljufout, T., (2021) Perception of cycling risks and needs associated with skill level, gender, and age, *Archives of Transport*
- Khliefat, I., Naser, M., **Alhomaidat, F.**, and Hanadeh, S. (2021) Improving the Capacity and Level of Service at the Sixth Circle in Jordan by Using Traffic Signals and Roundabout Metering Approach, *The Open Transportation Journal*,
- **Alhomaidat, F.**, and Acosta-Rodriguez, L, (2021) How Does Pedestrian-Driver Behavior Influence in the Number of Crashes? A Michigan's Case Study, *Transport and Telecommunication*,22(2), 152-162
- **Alhomaidat, F.**, Kwigizile, V, and Oh, J (2020) Impacts of freeway speed limit on operation speed of adjacent arterial roads, *IATSS Research*, 2(4), 161-168
- **Alhomaidat, F.**, Kwigizile, V, Oh, J., and Van Houten, R. (2020) How does an increased freeway speed limit influence the frequency of crashes on adjacent roads?, *Accident Analysis & Prevention*, 136, 105433
- **Alhomaidat F.** and Ardekani S: A Statistical Comparison of Traffic Measurements from the Moving versus Stationary Observer Methods. *Journal of Transportation Technologies*, 5, 204 -2013 doi: 10.4236/jtts.2015.54019.

CONFERENCES PAPERS

- El-Yabroudi, M., Ghadi, A., **Alhomaidat, F.**, & Al Mamlook, R. E. (2025, May). Towards Safer Mixed Traffic: A Deep Learning Approach to Autonomous Vehicle Detection and Driver Awareness. In *2025 IEEE International Conference on Electro Information Technology (eIT)* (pp. 213-218). IEEE.
- **Alhomaidat, F.**, Hasan, R.Hananadeh, S., and Alhajyaseen, W. (2022). Do Crash Fact Signs Improve the Speeding Behavior along Freeways? Driving Simulator Study. 2nd International Traffic Safety Conference, 2022, Qatar.
- **Alhomaidat, F.**, Kwigizile, V, and Oh, J. (2019). Impacts of Freeway Speed Limit on Operation Speed of Adjacent Arterial Roads. Presented at the 98th Annual Meeting of the Transportation Research Board (TRB), January 2019, Washington, D.C.
- **Alhomaidat, F.**, Kwigizile, V, and Oh, J. (2019). Cycling Risks and Needs Perception of Different Skill Levels and Age Groups. Presented at the 98th Annual Meeting of the Transportation Research Board (TRB), January 2019, Washington, D.C.
- **Alhomaidat F.**, Kwigizile V, Oh J, Al-fuqaha A, and Mohammadi S: The Relationship between Cycling Risk Perception and Skill Level of Different Age Groups. Presented By Alhomaidat at 6th Annual International Cycling Safety Conference, Davis, California, USA, September 2017.
- Acosta L, and **Alhomaidat F**: How does the pedestrian-driver behavior influence the number of crashes. Presented by Alhomaidat at Great lakes district Annual meeting, Lansing, Michigan, June 2017. –
- **Alhomaidat F**: Analyzing Grand Rapids' Pedestrian Crash Data Spatially Presented at IMGIN's 2017 Annual Conference, Travers City, Michigan, June 2017.

TECHNICAL REPORTS

- Oh, J. S., Kwigizile, V., Ro, K., Feizi, A., Kostich, B. W., Hasan, R. A. H., & **Alhomaidat, F.** (2017). Effect of Cycling Skills on Bicycle Safety and Comfort Associated with Bicycle Infrastructure and Environment (No. TRCLC 15-01). Western Michigan University. Transportation Research Center for Livable Communities. Al-Fuqaha, A., Mohammadi, S., Oh, J. S., Kwigizile, V., & **Alhomaidat, F.** (2017). Integrated Crowdsourcing Platform to Investigate Non-Motorized Behavior and Risk Factors on Walking, Running, and Cycling Routes (No. TRCLC 15-06).

FUNDED PROJECTS

- **Comprehensive analysis of pedestrian safety and bollard applications in Aqaba**
\$5000. Co-PI. Sponsored by AHU, Jordan, 2024
- **Measuring usefulness of crash fact signs on speeding behavior: a case study from sahrawai highway.**

\$7,000. *Principal investigator*. Sponserd by AHU, Jordan, 2022.

- **Web crippling Numerical Investigation of Roll-formed Aluminum Channel Section with an opening.**
\$37,000. Co-PI. Sponserd by AHU, Jordan, 2021.

Industry Experince

Transportation Modeler

Jan 2019– Jul 2019

- *The Southeast Michigan Council of Governments (SEMCOG), Detroit, Michigan, USA*
- Analyze commercial vehicle and freight data survey to develop a model to assist regional freight planning activities. Review the implementation of Activity Based Modeling (ABM) approach instead of four-step model.

Site Engineer

Nov 2011–Jan 2013

- *DURRAT ALQASSEM CONTRACTOR COMPANY, Jordan*
- Manage and direct staff members and the construction, operations, or maintenance activities at project site.
- Provide technical advice regarding design, construction, or program modifications and structural repairs to industrial and managerial personnel.
- Inspect project sites to monitor progress and ensure conformance to design specifications and safety or sanitation standards.
- Estimate quantities and cost of materials, equipment, or labor to determine project feasibility.
- Test soils or materials to determine the adequacy and strength of foundations, concrete, asphalt, or steel. Computeload and grade requirements, water flow rates, or material stress factors to determine design specifications.
- Analyze survey reports, maps, drawings, blueprints, aerial photography, and other topographical or geologic data to plan projects.
- Direct or participate in surveying to lay out installations or establish reference points, grades, or elevations to guide construction.

Site Engineer

Sep 2010–Oct 2011

- *HESCO ENGINEERING & CONSTRUCTION COMPANY, Jordan*
- Test soils or materials to determine the adequacy and strength of foundations, concrete, asphalt, or steel.
- Analyze survey reports, maps, drawings, blueprints, aerial photography, and other topographical or geologic data to plan projects.
- Direct engineering activities to ensure compliance with environmental, safety, or other governmental regulations.
- Inspect project sites to monitor progress and ensure conformance to design specifications and safety or sanitation standards.

PROFESSIONAL TRAINING BACKGROUND

- **Al-Hussein Bin Talal University**
 - Management of the university classroom, modern trends in teaching
 - Subject file for study plan preparation
 - Academic exchange with European universities
 - Learning and Teaching Capacity-building Workshop Focusing on Developing Learning Objectives, British Council
 - A certified quality Assurance evaluator for the Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI)

ACADEMIC SERVICE ACTIVITIES

- **Al-Hussein Bin Talal University**
 - o Member, Class schedule committee, civil engineering department 2019-2024
 - o Member, Academic Curriculum Committee, Civil Engineering Department 2019-2024
 - o Chair, Academic Curriculum Committee, Civil Engineering Department 2021-2022
 - o Member, Graduation Projects Committee, Civil Engineering Department, 2019-2023
 - o Chair, Committee on Requirements of Establishing the Rehabilitation in Civil Engineering Master Program in the Civil Engineering Department. , 2023
 - o Chair, Committee for the receipt of central tender No. (18/2023) for the renovation of the College of Engineering Auditorium 2024
 - o Chair, Committee for the receipt of central tender No. (11/2023) for the supply of materials and necessities for maintenance purposes, 2024
 - o Chair, Committee for supervision of the tender No. (2/2023) for the construction of the service and maintenance building, in 2024

OTHER RESEARCH ACTIVITIES

Reviewer for the following journal

- Accident Analysis & Prevention, Elsevier
- Ain Shams Engineering Journal, Elsevier
- Case studies on Transport Policy, Elsevier
- International Journal of Civil Engineering. Springer
- International Journal of Concrete Structures and Materials, Springer
- Energy for Sustainable Development, Elsevier
- Vehicles, MDPI
- Infrastructure, MDPI
- Sustainability, MDPI

AWARDS AND HONORS

- **ITE 2017 student paper winner** Oct 2017, Institute of Transportation Engineering Paper title "Cycling risk perception and skill level of different age groups."
- **2nd place IMAGIN's student best paper award** Apr 2017, IMAGIN "Improving Michigan Access to Geographic Information System" Paper title "Analyzing Grand Rapids' Pedestrian Crash Data Spatially"
- **2nd Place Best Poster Award** Jun 2016, Third Annual Summer Conference on Livable Communities Poster Title "An Experimental Investigation of Rider-Influenced Bicycle Dynamics in a Transportation Environment"
- **Ph.D. Full Scholarship from Al-Hussein Bin Talal University** Aug 2015, to earn Ph.D. degree in Transportation Engineering from WMU.
- **Master. Full Scholarship from Al-Hussein Bin Talal University** Aug 2015, to earn a Master's degree in Transportation Engineering from UTA
- **Bachelor. Full scholarship from royal Hashemite Court** Jan 2011, to earn bachelor degree in civil engineering

LANGUAGE PROFICIENCY

- **Arabic** Native language.
- **English** Native level

ADDITIONAL SKILLS

- Design software: AutoCAD, HCS 2010, ArcMap GIS, and MicroStation Technical design.
- Simulation software: VISSIM, SYNCHRO, Trans CAD.

- Statistical software: STATA.
- Personal attributes: Excellent communication, planning, teamwork, and organizational skills. Experience in working and managing within a changing environment. Self-motivator and the ability to motivate others.

LIST OF REFERENCES

- **Dr. Marwan M. Batiha**
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