

Tamer Bataineh, EIT

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SUMMARY

Texas EIT and Ph.D. candidate in Transportation Engineering (expected Dec. 2026) with four years of experience in traffic signal timing and coordination, Synchro, VISSIM microsimulation, traffic safety analysis using Highway Safety Manual (HSM) methods, and GIS. Completed signal timing, restriping, and corridor coordination studies for the TxDOT Fort Worth District, and built crash analytics dashboards for four TxDOT districts.

EDUCATION

Ph.D., Transportation Engineering , <i>Texas Tech University, Lubbock, Texas</i>	Dec. 2026 (Expected)
M.S., Transportation Engineering , <i>Texas Tech University, Lubbock, Texas</i>	May 2024
B.S., Civil Engineering , <i>Jordan University of Science and Technology, Irbid, Jordan</i>	Feb. 2018

LICENSES

Engineer in Training (EIT) , State of Texas	2024
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EXPERIENCE

Research Assistant , <i>Texas Tech Civil Engineering Department, Lubbock, Texas</i>	May 2022 - Present
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- Process and analyze roadside LiDAR vehicle trajectory data.
- Build and calibrate VISSIM microsimulation models.
- Conduct data-driven safety analysis.
- Perform traffic signal design and coordination studies for TxDOT interagency contracts.
- Write quarterly progress reports to TxDOT and present results to TxDOT staff.

Vice President , <i>ITE Student Chapter, Texas Tech University, Lubbock, Texas</i>	Feb. 2023 - Present
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- Organize student transportation events and member engagement activities.

Graduate Assistant , <i>Texas Tech Civil Engineering Department, Lubbock, Texas</i>	Mar. 2022 - May 2022
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- Graded AutoCAD assignments and helped students with drawing concepts.

Geographic Information Systems Analyst Intern , <i>City of Lubbock, Lubbock, Texas</i>	Jun. 2025 - Jan. 2026
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- Refined Traffic Analysis Zones (TAZs) in ArcGIS for transportation planning and traffic modeling.
- Supported a regional county-to-county OD study across the 15-county SPAG region in coordination with the Lubbock MPO Director.
- Analyzed 2019-2023 inbound and outbound trips to Lubbock County, adjusting for uneven monthly coverage.

Mathematics Teacher , <i>Ministry of Education, Abu-Dhabi, UAE</i>	Jun. 2019 - Dec. 2021
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- Planned lessons, prepared assignments, and tests, and assessed student progress.

Structural Engineer , <i>Jadara Office for Engineering Consultants, Irbid, Jordan</i>	Apr. 2018 - Jun. 2019
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- Designed project elements using ETABS, SAFE, and SAP2000.
- Reviewed reports, drawings, blueprints, and testing reports, and helped prepare reports, specifications, plans, and permit applications.

SELECTED PROJECTS

TxDOT Fort Worth District - Signal Timing and Coordination Studies (2023 - 2026)

- FM 1187 at I-20: Optimized signal phasing, restriping, and coordination using Synchro and drone-observed queues; TxDOT implemented the recommendations.
- SH 26 at IH 820 and FM 1938: Optimized signal timing and offsets, reducing cycle length from 130 to 125 seconds; co-developed a YOLOv8 model achieving 92–99% agreement with manual traffic counts.
- SH 10 and SH 183: Modeled 15 signalized intersections and evaluated coordination alternatives using bandwidth and performance index.

TxDOT - Crash Data Analysis Dashboards (Lubbock, Amarillo, Fort Worth, and Childress Districts)

- Developed interactive ArcGIS crash dashboards from TxDOT CRIS KAB data to improve crash data visualization and support safety analysis across multiple districts.
- Built the Lubbock MPO Collision Dashboard (2016 to June 2026, eight counties) and the Lubbock Transportation and Attractions Dashboard for the City of Lubbock.
- Used the Amarillo dashboard to conduct a before-and-after safety evaluation of Super 2 highway projects on US 54 and US 87 using Highway Safety Manual (HSM) Empirical Bayes methods.

TxDOT Amarillo District - I-27 and SH 217 Intersection Safety Study (2024)

- Collected drone video and checked sight distance against AASHTO; recommended a 40-mph speed limit, MUTCD stop-line placement, and doubled-up oversized stop signs.

PUBLICATIONS

6 publications in total. Most relevant to traffic safety and simulation:

1. **Bataineh, T.**, Bhattarai, N., Jimenez, K., Zhang, Y., Lucero, M., Zhao, J., Liu, H. (2025). Evaluating Driving Behavior and Intersection Safety Using Roadside LiDAR: A Study of Safety Indicators Across Collision Metrics. *Journal of Transportation Safety & Security*.
2. Igene, M., Luo, Q., Jimenez, K., Soltanirad, M., **Bataineh, T.**, Liu, H. (2024). Integrating LiDAR Sensor Data into Microsimulation Model Calibration for Proactive Safety Analysis. *Sensors*, 24(13), 4393.
3. Soltanirad, M., Naserelavi, S., Jimenez, K., Luo, Q., **Bataineh, T.**, et al. (2025). Development of a New Safety Indicator for Predictive Safety Analysis Based on Arbitrary Surrogate Safety Measures Using LiDAR Sensor Data. Transportation Research Board 104th Annual Meeting, Washington, DC.

TECHNICAL SKILLS

- **Traffic engineering and simulation:** Synchro, PTV VISSIM, signal timing and coordination, cycle length, offset, and split optimization, intersection delay and queue analysis, flashing yellow arrow warrants, MUTCD, drone-based traffic data collection
- **Design software:** OpenRoads Designer, AutoCAD
- **Safety analysis:** Highway Safety Manual (HSM) methods, surrogate safety measures, TxDOT CRIS crash analysis, before-and-after studies, DBSCAN hotspot clustering
- **Data, GIS, and programming:** ArcGIS Pro, ArcGIS Online dashboards, Python, R, Power BI, YOLOv8 computer vision, roadside LiDAR trajectory data
- **Structural design (earlier experience):** ETABS, SAFE, SAP2000
- **General:** Microsoft Office, basic Adobe Creative