MIKIAS WORKNEH GUGSSA

Assistant Professor of Practice
Civil, Environmental, and Construction Engineering (CECE)
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EDUCATION

PhD. Civil Engineering	Mississippi State University	2025
M.Sc. Civil Engineering	Addis Ababa University	2016
B.Sc. Civil Engineering	Addis Ababa University	2007

PROFESSIONAL EXPERIENCE

Assistant Professor of Practice	Texas Tech University	2025 -
Infrastructure Improvement Specialist	Chemonics Inc. (GHSC-PSM)	2017 - 2021
Regional Engineer	Tetra Tech Inc-ESCO	2015 - 2017
Senior Construction Management Engineer	Ethiopian Sugar Corporation	2011 - 2012
Project Engineer	Addis Ababa Housing Development Project Office	2008 – 2011

RESEARCH INTEREST

- Technology-Enabled Education in Construction Engineering
- Construction Safety and Health
- Human Behaviors and Factors
- Artificial Intelligence (AI) in Construction Engineering
- Virtual Reality (VR) in Construction Engineering
- Building Information Modeling (BIM)
- Smart Construction and Automation in Construction

AWARDS

- Student Research Travel Award, Bagley College of Engineering (2024)
- James Franklin Brownlee Endowed Scholarship in Engineering, Bagley College of Engineering (2024)
- Travel Assistance Grant for Graduate Students (TAGGS), Mississippi State University (2024)

PUBLICATIONS

Peer-Reviewed Published (including accepted) Journal Articles

1. **Gugssa, M**., Li, L., Pu, L., Gurbuz, A., Luo, Y., and Wang, J. (2024). Enabling near-real-time safety glove detection through edge computing and transfer learning: Comparative analysis of edge and cloud computing-based methods. *Engineering, Construction and Architectural Management*.

2. **Gugssa, M**., Assafi, M. N., Zhujun, P., Chen, J., and Wang, J. (n.d). Assessment of Mental Fatigue Using Electroencephalography to Prevent Safety Hazards in Construction: A Pilot Study. *Professional Safety*. (accepted)

Peer-Reviewed Journal Articles Under Review

1. **Gugssa, M.,** Wang, J., Ma, J., Howard, I. L., and Wang, Y. (n.d). Enhancing Human-Technology Interactions in Virtual Reality-Based Ergonomics Training for Construction Safety.

Peer-Reviewed Published (Including Accepted) Conference Papers

1. **Gugssa, M**., Wang, J., Ma, J., Howard, I. L., Wang, Y. and Cotton, J. (n.d.). Smart Safety Training System with Enhanced Human-Technology Interactions (HTIs) for Work Zone Safety Improvement. *Computing in Civil Engineering 2024* (Accepted, in press). **Presenter**.
2. Chen, J., Yee, J., Goodin, C, **Gugssa, M**, Wang, J., and Das, A. (n.d.). LiDAR-based Traversability Estimation for Ground Robots on Construction Sites using Self-Supervised Learning. In *Computing in Civil Engineering 2024* (Accepted, in press).
3. Chen, J, Yee, J., Goodin, C., **Gugssa, M.**, Wang, J., and Das, A. (n.d.). Object-level Temporal Change Detection on Construction Sites with 3D Deep Learning Models. In *Computing in Civil Engineering 2024* (Accepted, in press).
4. **Gugssa, M**., Li, L., Pu, L., Gurbuz, A., Luo, Y., and Wang, J. (2023). Enhancing the Time Efficiency of PPE Detection Using Edge Computing. *Computing in Civil Engineering 2023* (pp. 532-540). **Presenter**.
5. Chen, J., **Gugssa, M**., Yee, J., Wang, J., Goodin, C., and Das, A. R. (2023). Framework for Digital Twin Creation in Off-Road Environments from LiDAR Scans. *SPIE 12529: Synthetic Data for AI and ML Applications*.
6. **Gugssa, M**., Gurbuz, A., Wang, J., Ma, J., and Bourgouin, J. (2021). PPE-Glove Detection for Construction Safety Enhancement Based on Transfer Learning. *Computing in Civil Engineering 2021* (pp. 58-65). **Presenter**.

TECHNICAL REPORTS

1. Wang, J, Howard, I. L., Ma, J., & Gugssa, M. (2024). Mississippi DOT Virtual Reality Safety Training Study. SS327 MDOT VR Safety Training Study Report_Final.pdf
2. Wang, J, Zhujun, P., Gugssa, M., & Assafi, M. N. (2023). Assessment of Construction Workers' Mental Fatigue to Prevent Safety Hazards.

POSTER PRESENTATIONS

1. *Southeast Regional Research Symposium* (2024). Smart Safety Training System with Enhanced Human-Technology Interactions for Work Zone Safety Improvement. Lexington, KY, March 2024.
2. *Spring 2024 Graduate Research Symposium* (2024). Smart Safety Training System with Enhanced Human-Technology Interactions for Work Zone Safety Improvement. Starkville, MS, February 2024.

PROFESSIONAL AFFILIATIONS

- Student Member, American Society of Civil Engineers (ASCE)
- Student Member, Construction Management Association of America (CMAA)
- Member, Natural Hazards Engineering Research Infrastructure (NHERI) Graduate Student Council

TRAINING AND CERTIFICATIONS

- Preparing Future Faculty Program, Mississippi State University (2024)
- Online Teaching 101, Mississippi State University (2024)
- OSHA 30-Hour Construction Safety and Health Certification (2025)
- Golden Key International Honour Society

SERVICES

- **Evaluator:** Summer 2024 Undergraduate Research Symposium, Mississippi State University
- **Evaluator:** Spring 2025 Undergraduate Research Symposium, Mississippi State University
- **Judge:** 2025 ASCE Construction Institute Student Symposium Competition- Gulf Coast