

HAFIZ OYEDIMEJI OYEDIRAN

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EDUCATION

University of Nebraska – Lincoln, Lincoln, Nebraska	Expected May 2025
Ph.D. in Construction Engineering and Management (Minor in Computer Science)	
Thesis: Robot Integrated 4D Building Information Modeling for Construction Project Planning	
Advisor: Dr. Kyungki Kim	
University of Lagos, Lagos State, Nigeria	January 2017
M.Sc. Construction Management	
University of Lagos, Lagos State, Nigeria	October 2013
B.Sc. Building	
Lagos State Polytechnic, Lagos State, Nigeria	October 2011
Higher National Diploma in Civil Engineering Technology	
Lagos State Polytechnic, Lagos State, Nigeria	October 2008
Ordinary National Diploma (Distinction) in Civil Engineering Technology	

RESEARCH/TEACHING EXPERIENCE

Faculty Lecturer, Tagliatela College of Engineering, University of New Haven

August 2024 – Present

Responsibilities:

- Teaching and Instruction: Deliver lectures, lead discussions, and conduct practical sessions on civil engineering, construction management, and related topics.
- Curriculum Development: Design course materials, assignments, and assessments to align with learning objectives.
- Student Mentorship: Guide students academically and professionally, providing feedback on their progress.
- Research and Scholarly Work: Conduct and publish research in construction engineering and management, safety, and robotics.
- Industry Collaboration: Engage with industry professionals to integrate real-world case studies and projects into teaching.

Graduate Research/Teaching Assistant, University of Nebraska – Lincoln, Lincoln.

January 2021 – August 2024

Responsibilities:

- Conduct Research in Construction Robotics and 4D BIM: Investigated robot task scheduling and planning in construction environment considering safety and productivity.
- Analyze Construction Safety Risks: Developed rule-based systems to detect hazards and evaluate safety conditions in dynamic environments.
- Data Collection and Analysis: Processed and analyzed data related to robot actions, spatial planning, and safety management in construction.

- Collaborate on Funded Research: Worked on a \$2000000 NSF-funded project with Georgia Tech and Tennessee State University, contributing to construction automation advancements.
- Publish and Present Research Findings: Authored and co-authored academic papers, presented research at conferences, and contributed to scholarly discussions.
- Support Teaching and Student Mentorship: Assisted in course instruction, guided students in research projects, and contributed to STEM outreach programs.

Mathematics Instructor, Government Commercial Junior Secondary School, Takum L.G., Taraba State, Nigeria

August 2012 – June 2013

PUBLICATIONS

Peer-reviewed Journal Publications **Oyediran, H.**, Turner, W., Kim, K., and Barrows, M. (2024). “Integration of 4D BIM and Robot Task Planning: Creation and Flow of Construction-Related Information for Action-Level Simulation of Indoor Wall Frame Installation”. Journal of Information Technology in Construction.

Oyediran, H., Turner, W., Kim, K., and Barrows, M. (2024). “Integration of 4D BIM and Robot Task Planning: Creation and Flow of Construction-Related Information for Action-Level Simulation of Indoor Wall Frame Installation”. arXiv preprint arXiv:2402.03602

Onatayo, D., Onososen, A., Oyediran, A., **Oyediran, H.**, Arowoiya, V., Onatayo, E., (2024). “Generative AI and LLM Applications in Architecture, Engineering, and Construction: Trends, Implications for Practice, Education and Imperatives for Upskilling”. Architecture, mdpi.com (2024).

Peavy, M., Kim, P., **Oyediran, H.**, & Kim, K. (2023). “Integration of Real-Time Semantic Building Map Updating with Adaptive Monte Carlo Localization (AMCL) for Robust Indoor Mobile Robot Localization”. Applied Sciences, 13(2), 909. <https://doi.org/10.3390/app13020909>

Ansaripour, A., Heydariaan, M., Kim, K., Gnawali, O., **Oyediran, H.** (2023). “ViPER+: Vehicle Pose Estimation Using Ultra-Wideband Radios for Automated Construction Safety Monitoring”. Applied Sciences, 13(3), 1581. <https://doi.org/10.3390/app13031581>

Works in Preparation **Oyediran, H.**, and Kim, K. (2025). “Rule-Based Automated Safety Checking System for Construction Robots in Complex Environments”. Safety Science

Oyediran, H., and Kim, K. (2025). “Development of Robot Integrated 4D BIM for Construction Project Planning and Task Simulation”. Automation in Construction.

	Oyediran, H., and Kim, K. (2025). “4D BIM Integrated Decision-Making Process for Autonomous Robot task Planning in Construction Environment”. ASCE Journal of Engineering and Management
Peer-refereed Conference Proceedings	Oyediran, H., Kim, K., Huang, P., Stentz, T., and Kopocis, K., (2025). "4D BIM Integrated Rule-Based Safety Checking System for Identifying Safety Hazards in Construction Robot Operations" Joint CSCE Construction Specialty and CRC Conference, Montreal, Quebec, Canada.
	Oyediran, H., Turner, W., and Kim, K. (2024). " Information Modeling for Construction Robot Task Planning and Simulation in 4D BIM" Construction Research Conference, Des Moines, Iowa, USA.
	Oyediran, H., Shiraz, A., Peavy, M., Merino, L., and Kim, K. (2024). " Human-Aware Safe Robot Control and Monitoring System for Operations in Congested Indoor Construction Environment " Construction Research Conference, Des Moines, Iowa, USA.
	Oyediran, H., Peavy, M., and Kim, K. (2021). “Autonomous Building Occupancy Monitoring Using Robots” ASCE International Conference on Computing in Civil Engineering (i3CE2021), Orlando, Florida, USA.
	Oyediran, H., Ghimire, P., Peavy, M., Kim, K., and Barutha, P. (2021). "Robotics Applicability for Routine Operator Tasks in Nuclear Power Plants Facilities " 38th International Symposium on Automation and Robotics in Construction (ISARC), Dubai, UAE. doi: 10.22260/ISARC2021/0091 Pages 677-682 (2021 Proceedings of the 38th ISARC, Dubai, UAE, ISBN 978-952-69524-1-3, ISSN 2413-5844)
Other	BIM Africa. 2020. Africa BIM Report 2020. https://www.researchgate.net/publication/344197161_African_BIM_Report_2020 .

GRANTS & FUNDING

- **University of New Haven, West Haven, Connecticut**
 - Mini-Grant for Entrepreneurial Minded Learning (EML) Fall 2024

AWARDS & HONORS

- **Future Faculty Career Exploration Program Fellow**, Rochester Institute of Technology - September 2024
- **Trailblazer in Engineering Fellow**, Purdue University, Lafayette - July 2024
- **Black in Robotics**, Stanford, CA
 - Student Conference Travel Grant March 2024

- **Computer Science Mentorship Program, Google Research** September – December 2022
 - Received mentorship from Google researchers on navigating research and career choices.

- **University of Nebraska – Lincoln, Lincoln, Nebraska**
 - Dean Fellowship, College of Engineering, 2024 – 2025
 - College of Engineering Professional Development Fellowship, Fall 2023
 - Graduate Student Travel Grant, Fall 2023
 - Spring Fling Fellowship, School of Computing, Spring 2023
 - Milton E. Mohr Fellowship, School of Engineering, 2022 - 2023
 - Graduate Teaching/Research Assistantship, Spring 2020 - Present

- **Lagos State Polytechnic, Ikorodu, Lagos, Nigeria**
 - Best Graduating Student in National Diploma, Department of Civil Engineering Technology 2008

WORK EXPERIENCE

Build Safe Nigeria Limited, Lagos, Nigeria May 2019 – October 2020

Engineer in Training

- Performed analysis and design of structural members in buildings and infrastructure.
- Prepared details of structural details of building elements.
- Quality compliance personnel on BIM processes and workflows.

Caliph Engineering Limited, Lagos, Nigeria April 2018 – May 2019

Site Engineer

- Performed construction project supervision, planning, execution, organization, and control for the refurbishment of a gas station.

Articon Nigeria Limited, Lagos, Nigeria April 2017 – March 2018

Construction Manager

- Oversee the planning and construction operations for 4 faculty buildings at the University of Africa, Bayelsa state, Nigeria.
- Produce daily and weekly reports and progress of work.
- Produce daily cash flow information, and material inventory to meet the project program.

Mc Ahad Shelters Limited, Lagos, Nigeria October 2016 – April 2017

Site Engineer

- Supervised the construction operations for a three-story residential construction.

Prowess Engineering Limited, Lagos, Nigeria May 2012 – October 2016

Structural Engineer in Training / Site Engineer

- Carried out analysis and design of structural members in buildings.
- Prepared details of structural designs
- Performed supervision, planning, execution, organization, and control for construction projects such as buildings and pile installation for bridges.
- Produced weekly reports and progress of work on design and construction tasks.

- Monitor and report daily cash flow information and material inventory to meet the project program.

H.A and Associates Nigeria Limited

October 2008 – December 2009

Site supervisor (Internship)

- Carried out planning, budgeting, and supervision of labor, material, and work procedures.

PRESENTATION

- **2024 ASCE Construction Research Conference, Des Moines, Iowa, USA.**
 - Information Modeling for Construction Robot Task Planning and Simulation in 4D BIM.
 - Human-Aware Safe Robot Control and Monitoring System for Operations in Congested Indoor Construction Environment.
- **38th International Symposium on Automation and Robotics in Construction (ISARC, 2021), Dubai, UAE.**
 - Robotics Applicability for Routine Operator Tasks in Nuclear Power Plants Facilities.
- **2021 ASCE International Conference on Computing in Civil Engineering (i3CE2021), Orlando, Florida, USA.**
 - Autonomous Building Occupancy Monitoring Using Robots. (*Publication ranked in the top 10 percent for the conference*)
- **Nigerian section of the American Society of Civil Engineers (ASCE), 4th Quarterly Meeting.**
 - Introduction to Building Information Modelling (BIM). - 2019
 - Electronic Tendering System in Nigeria; Awareness, Barriers, and Drivers -2016

PROFESSIONAL ACTIVITIES

- **Manuscript Reviewer**
 - Automation in Construction 2024 - 2025
 - Developments in the Built Environment 2024
 - Journal of Information Technology in Construction 2024
 - 2024 ASCE Construction Research Congress 2024

LEADERSHIP AND SERVICE

- **Co-Founder and General Secretary to the Board of Directors, BIM Africa Initiative, Abuja, Nigeria (<https://bimafrica.org/>)** April 2018 – Present
 - Organized programs that provided educational awareness, training, and mentorship to students and professionals across Africa on the use of BIM

PROFESSIONAL CERTIFICATIONS

- Occupational Safety and Health Administration (OSHA) 30-hour Certificate

PROFESSIONAL MEMBERSHIPS

- Student Member, American Society of Civil Engineers
- Graduate member, Nigerian Institute of Builders

MENTORSHIP

- Mentored Master of Science student (2022 – 2024) on various research activities in Construction Engineering and Management

SKILLS

- **Software:** Autodesk Revit, Navisworks, Robot Structural Analysis, Autodesk Civil 3D, BIM 360, Microsoft Project, Blender, Git, Unity 3D, Protégé, Bluebeam, RSMeans
- **Programming:** Python, C++, C#, Robot Operating System (ROS)

OUTREACH

- **Architecture, Construction, and Engineering (ACE) Mentor Program of America**
 - Introduced 150 high school students to the applications of robotics in Construction Engineering and Management.