**HAFIZ OYEDIMEJI OYEDIRAN**

Lecturer, Department of Civil Engineering, Tagliatela College of Engineering,

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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**

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| 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> |
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| 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 |
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| 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](http://dx.doi.org/10.22260/ISARC2021/0091) Pages 677-682 (2021 Proceedings of the 38th ISARC, Dubai, UAE, ISBN 978-952-69524-1-3, ISSN 2413-5844) |
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| 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/**](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.