

SOLOMON SESESIE AJASA, MS

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Research Interests

Occupational Safety and Health, Fall Hazard, Heat Stress, Machine Learning (ML) in Construction, Emerging Construction Technologies, and Post-Disaster Reconstruction.

Educational Qualification

The University of Alabama, Tuscaloosa, Alabama, USA

Doctor of Philosophy in Civil Engineering (Construction Engineering & Management), May 2026

Concentration: Construction Fatal Fours, Machine Learning in Construction, Post-Disaster Reconstruction.

Advisor: Dr. Shane Crawford

The University of Alabama, Tuscaloosa, Alabama, USA

Master of Science, Civil Engineering (3.83/4.0), May 2023

Non-thesis Report: Detecting and Preventing Falls Using a Hybrid Technology System: A Review.

Advisor: Dr. Siyuan Song

Yaba College of Technology, Lagos, Nigeria

Higher National Diploma in Civil Engineering (3.45/4.0), December 2018

Thesis Report: Effect of Environment on Bond Strength of Lapped Splices.

Lagos State Polytechnic, Lagos, Nigeria

National Diploma in Civil Engineering (3.38/4.0), May 2015

Research Experience

Graduate Research Assistant, The University of Alabama, July 2022 – Present

Investigating Safety Challenges in Post-Disaster Reconstruction

- ✓ Engage in ongoing research aimed at understanding and addressing safety challenges specific to post-disaster reconstruction environments
- ✓ Evaluate state-level Hazard Mitigation Plans to assess how well they address worker safety during post-disaster reconstruction, identifying gaps and best practices across states.
- ✓ Integrate historical weather data from the National Weather Service with OSHA accident records to develop predictive insights into environmental risks that impact worker safety in post-disaster environments.

Enhancing Workplace Safety through Hazard Awareness Training for New and Inexperienced Surface Miners.

- ✓ Participated in a federally funded training program to improve workplace safety for surface miners under **grant number BS000007B23** from the Mine Safety and Health Administration, U.S. Department of Labor.
- ✓ Developed and implemented education programs on accident causation, hazard identification, first-aid procedures, prevention strategies, and miners' rights and responsibilities.
- ✓ Tailored training materials to address MSHA-identified safety priorities, enhancing the safety knowledge and practices of new and inexperienced mine operators and miners.
- ✓ Employed a hands-on, interactive training approach to ensure the practical application of safety procedures, contributing to a safer mining environment.

- ✓ Trained over 400 miners across the southeast region of the United States of America

Fortifying Workforce Safety: Strengthening Training Capacity for Heat Illness Prevention.

- ✓ Contributed to a critical training initiative on heat illness prevention, supported by **grant number SH000096SH3** from the Occupational Safety and Health Administration, U.S. Department of Labor.
- ✓ Created comprehensive training content on heat stress, OSHA guidelines, symptoms of heat illness, and immediate mitigation actions aimed at supervisors and employees.
- ✓ Enabled employees and managers to collaboratively identify and mitigate risks of heat exposure in the workplace, significantly reducing the potential for heat-related illnesses.
- ✓ Enhanced workplace safety by educating on recognizing early indicators of heat exposure and implementing preventative strategies.
- ✓ Trained over 800 construction workers across the United States of America in two years.

Workplace Infectious Disease Control.

- ✓ Involved in developing a workplace infectious disease control training program in response to the COVID-19 pandemic, with funding from **grant number SH36978HA1** by the Occupational Safety and Health Administration, U.S. Department of Labor.
- ✓ Focused on educating employers and employees on infection prevention, control measures, and personal protective equipment to mitigate the spread of infectious diseases in the workplace.
- ✓ Provided guidance on implementing engineering, administrative, and work practice controls to minimize exposure to infectious diseases.
- ✓ Assisted in customizing training topics to meet workplace needs, ensuring comprehensive understanding and preparedness for infectious disease outbreaks.

Water-R20 NRT Program.

- ✓ Conducted a preliminary review on state-of-the-art thinking and practice in interdisciplinary and practice-oriented graduate research programs. To point toward practices suitable to the NRT project [In relation to 'The Water-R20 NRT Project (2022)']

Publications

Accepted Peer-Reviewed Conference Papers

- ✓ **Ajasa, S.**, Lyu, P., Marchiori, R., and Song, S.* (2024). "Exploring the Impact of Weather Conditions on Construction Workers' Safety: A Focus on Fall Accidents. International Conference on Computing in Civil Engineering (i3CE 2024)
- ✓ Lyu, P., Ramezanpour, E., **Ajasa, S.**, and Song, S.* (2024). "Assessing Injury Risk Factors Among Construction Workers in Highway Work Zones. International Conference on Computing in Civil Engineering (i3CE 2024)
- ✓ **Ajasa, S.**, Marchiori, R., and Song, S.* (2024). "The Application of BIM-Based Technology Toward Fall Hazard Mitigation in Construction." Construction Research Congress (CRC 2024)
- ✓ Marchiori, R., **Ajasa, S.**, and Song, S.* (2024). "Assessing Usability, Frequency, And Efficiency of Fall Hazard Prevention Devices in Construction: Development of a Comprehensive Questionnaire for Evaluation." Construction Research Congress (CRC 2024)
- ✓ **Ajasa, S.**, and Song, S.* (2023). "Detecting and Preventing Falls Using a Hybrid Technology System: A Review." International Conference on Computing in Civil Engineering (i3CE 2023)
- ✓ Marchiori, R., **Ajasa, S.**, and Song, S.* (2023). "Exploring the Potential of BIM CAVE for Optimizing Construction Site Path Planning: A Review." International Conference on Computing in Civil Engineering (i3CE 2023)
- ✓ Lyu, P., Song, S., * and **Ajasa, S.** (2023). "Analyzing the Impact Factors of Occupational Struck-by Fatality with the Random Forest Model." International Conference on Computing in Civil Engineering (i3CE 2023)

- ✓ **Ajasa, S.**, Lyu, P., and Song, S.* (2025). "Impact of Weather Conditions on Workers' Safety in the U.S. Construction Industry: A Comprehensive Analysis of Fall Accidents," *Journal of Safety Science* (2025)

Research Presentations

Oral and Poster Presentations

- ✓ **Ajasa, S.**, Marchiori, R., and Song, S.* (2024). "The Application of BIM-Based Technology Toward Fall Hazard Mitigation in Construction." *Construction Research Congress (CRC 2024)*
- ✓ Marchiori, R., **Ajasa, S.**, and Song, S.* (2024). "Assessing Usability, Frequency, And Efficiency of Fall Hazard Prevention Devices in Construction: Development of a Comprehensive Questionnaire for Evaluation." *Construction Research Congress (CRC 2024)*
- ✓ **Ajasa, S.**, and Song, S.* (2023). "Detecting and Preventing Falls Using a Hybrid Technology System: A Review." *International Conference on Computing in Civil Engineering (i3CE 2023)*
- ✓ Marchiori, R., **Ajasa, S.**, and Song, S.* (2023). "Exploring the Potential of BIM CAVE for Optimizing Construction Site Path Planning: A Review." *International Conference on Computing in Civil Engineering (i3CE 2023)*
- ✓ **Ajasa, S.**, and Song, S.* (2023). "The Integration of BIM and XR in Construction Engineering Curriculum: Enhancing Safety Perceptions among AEC Students." *International Conference on Computing in Civil Engineering (i3CE 2023)*

Research Grant Writing

US Department of Labor, "Brookwood-Sago Mine Safety Grants," \$169,790, July 2023

- ✓ Assisted Dr. Siyuan Song in creating a comprehensive research grant proposal for the Department of Labor to enhance Mine safety, health awareness, education, and training.
- ✓ Contributed significantly to the proposal's content and objectives through research, data analysis, and a literature review.
- ✓ Aided in developing a straightforward and engaging project narrative that covered essential concerns such as mine safety, health awareness, and education.

Teaching and Mentoring Experience

Instructor of Records, The University of Alabama, January 2025 – May 2025

CE 464/564 (Safety Engineering and Management)

- ✓ Design and deliver lectures on safety management, accident prevention, OSHA regulations, and construction safety best practices.
- ✓ Guide undergraduate and graduate students through applied learning projects, including developing and presenting innovative safety control solutions.
- ✓ Facilitate workshops and guest lectures featuring industry professionals to provide real-world insights into field safety practices, risk mitigation, and regulatory compliance.
- ✓ Lead discussions on accident causation, human error, risk assessment, and behavior-based safety, integrating real-world case studies to reinforce learning.
- ✓ Maintain academic integrity and compliance with university policies, ensuring a structured and engaging learning environment.

Instructor of Records, The University of Alabama, August 2024 – December 2024

CE 366 (Introduction to Construction Engineering)

- ✓ Designed and delivered lectures covering key concepts in construction engineering, including project planning, materials, and safety protocols.
- ✓ Mentored 59 junior-level students through hands-on projects, guiding them in applying theoretical knowledge to practical construction scenarios.
- ✓ Evaluated student performance through assessments and project-based learning, providing feedback to improve their understanding and application of construction engineering principles.

Graduate Teaching Assistant, The University of Alabama, August 2022 – July 2024

CE 366 (Introduction to Construction Engineering), CE 464/564 (Safety Engineering and Management)

- ✓ Supported faculty in teaching and conducting lectures, proctoring examinations, and evaluating student performance.
- ✓ Assisted faculty in grading students' submissions and providing constructive feedback.

Graduate Mentor, SAVE Lab, The University of Alabama, August 2023 – May 2024

- ✓ Mentored four undergraduate students in the SAVE Lab, guiding them in training material development, data collection, and research project analysis.

Guest Lecturer, CIP 200, The University of Alabama, October 2023

CIP 200 (Global & Cultural Perspectives)

- ✓ Conducted a presentation on various aspects of international student life and provided an enriching and interactive experience, contributing to the students' cross-cultural awareness and learning, and creating a comfortable and enjoyable atmosphere for discussion.

University Service and Engagement

President, Graduate Student Association, May 2024 – April 2025

- ✓ Lead the GSA by representing the interests and concerns of over 6,000 graduate students at the University of Alabama in meetings with university administration, faculty, and external stakeholders.
- ✓ Develop and implement strategic initiatives to improve graduate students' academic, professional, and social experiences, ensuring alignment with institutional goals.
- ✓ Oversee the GSA's budget, allocate funds for various student programs and events, and ensure fiscal responsibility through collaboration with the finance committee.
- ✓ Coordinate and manage professional development workshops, networking events, and community-building activities that enhance the graduate student experience.
- ✓ Advocate for graduate student rights by engaging with university committees on issues like campus safety, transportation, mental health, and academic policies, influencing decision-making processes at the institutional level.

Inaugural Member, GAIN Influencer, University of Alabama, January 2024 – Present

- ✓ Representing the University of Alabama Graduate School, enhancing both domestic and international recruitment efforts through digital marketing initiatives
- ✓ Created and curated institutional social media content, leading to over 97,000 impressions and views in 7 months
- ✓ Supported professional networking and engagement through LinkedIn Voice, Twitter Space, and Facebook Live events

Graduate Ambassador, The University of Alabama, August 2023 – Present

- ✓ Engage with prospective and current graduate students to provide information, guidance, and support throughout their academic journey.

Leader, International Peer Advisory Council (IPAC), August 2023 – May 2025

- ✓ Lead and facilitate a Global Tide mentorship group, promoting cultural adjustment and intercultural exchange among international and domestic students.
- ✓ Communicate regularly with group members, organize monthly meetups, and conduct end-of-semester assessments to ensure the effectiveness of the mentorship program.

Graduate Student Representative, Standing Committees, The University of Alabama, August 2022 – April 2025

- ✓ UA Graduate Council
- ✓ Student & Campus Life Committee
- ✓ Vice President, Leader Advisory Board

- ✓ International Education Committee
- ✓ Safety and Security Committee

Peer Mentor, Tide Together Graduate Mentor Program, August 2023 – May 2024

- ✓ Participate as a peer mentor for the unique initiative dedicated to supporting traditionally underrepresented graduate students, with a focus on first-generation students, women in STEM fields, and racial and ethnic minorities.

Vice President, DEI, Graduate Student Association, May 2023 – April 2024

- ✓ Created and championed the diversity, equity, and inclusion (DEI) initiatives within the Graduate School community. Also, collaborated with fellow members to develop and implement programs and policies to foster a more inclusive and equitable graduate student community.

Community Engagement

Mentor, Ohio Academy of Science, October 2024 – February 2025

- ✓ Provide guidance to middle school students on STEM-related projects, ensuring the development of research and innovation skills.
- ✓ Support students in building critical thinking and career-focused capabilities, preparing them for future educational and professional opportunities in STEM fields

Mentor, Elevate West Alabama, September 2024

- ✓ Mentored 10th and 11th graders at Central High School through the Elevate West Alabama program, guiding students in academic success, career exploration, and personal development.

Evaluator, Thermo Fisher Junior Innovation Challenge, Society for Science, June – July 2024

- ✓ Conducted in-depth evaluations of 50 applications, assessing innovative STEM projects created by junior scientists competing for recognition in one of the nation's premier science competitions.
- ✓ Applied rigorous scoring rubric across multiple criteria such as project design, scientific thought, data analysis, originality, and overall impression, ensuring thorough differentiation of top talent.
- ✓ Delivered detailed, constructive feedback to each applicant to facilitate improvement and growth in their scientific pursuits.
- ✓ Played a pivotal role in identifying and advancing the top 15% of applicants, ensuring only the most exceptional projects progressed to the next competition stage.
- ✓ Demonstrated critical judgment and commitment to scientific excellence, contributing to the Challenge's mission of inspiring the next generation of STEM leaders.

Professional Service

Engineering Management Consultant, Blue Advisory, Lagos, Nigeria, March 2019 – May 2022

- ✓ Conducted market research on the real estate industry in Sub-Saharan Africa, participating in market penetration strategy development.
- ✓ Led the entire restructuring of an indigenous engineering firm, encompassing process, policy, and procedure improvements.
- ✓ Evaluated and re-strategized key performance indicators, control techniques, and documentation for a civil engineering firm.
- ✓ Contributed to marketplace assessment research, business plan development, and pitch deck creation for a tech start-up.
- ✓ Facilitated a strategy session for executives of a multipurpose engineering company and conducted an options assessment and environmental analysis for a green business start-up.

Project Engineer, Machris Integrated Services, Somolu, Lagos, Nigeria, December 2018 – February 2019

- ✓ Scrutinized structural and architectural designs submitted by consultants for possible errors and flaws.
- ✓ Oversaw the construction of 14 units, a three-bedroom apartment building in Somolu, Lagos
- ✓ Prepared detailed reports daily for transparency and quality assurance and monitored work progress regularly to ensure project objectives were met.
- ✓ Supervised the construction of 5 102 by 64-meter shrimp ponds at the Atlantic Shrimpers Limited shrimp farm in Iworo Ajido, Lagos, Nigeria.

Field Officer (Internship), Abilok Building Services, Badagry, Lagos, Nigeria, April 2015 – April 2016

- ✓ Supervised the construction of a bored pile foundation and the structural frames for the first floor of a 30-unit four- and three-bedroom building in Yaba.
- ✓ Inspected all types of repairs involving structural or aesthetic deficient failure.

Field Officer (Internship), Oriade Local Council Development Area, Lagos, Nigeria, September 2014 – December 2014

- ✓ Oversaw the renovation of a classroom at Agboju, Amuwo Odofin.
- ✓ Supervised the construction and rehabilitation of Ijegun Road, Amuwo Odofin.

Professional Service

Peer-Reviewed Articles For:

- ✓ Engineering, Construction and Architectural Management (ECAM)
- ✓ International Conference on Computing in Civil Engineering (i3CE)

Professional Affiliations

- ✓ Member of the Graduate Student Council, NSF Natural Hazard Engineering Research Infrastructure (NHERI)
- ✓ Student Member, American Society of Safety Professionals (ASSP)
- ✓ Student Member, Construction Management Association of America (CMAA)
- ✓ Student Member, National Society of Black Engineers (NSBE)
- ✓ Student Member, American Society of Civil Engineers (ASCE)
- ✓ Member, Construction Institute of ASCE
- ✓ Member, Blacks in Safety Engineering (BISE)

Licenses & Certifications

- ✓ CMIT (Construction Manager in Training) February 2025
- ✓ OSHA 30-Hour Outreach Training for the Construction Industry, April 2024
- ✓ ArcGIS Pro Basics, November 2023
- ✓ CITI Program, Data or Specimens Only Research, November 2022
- ✓ Graduate, Ready Set Work Initiative 3.0 August 2018
- ✓ Diploma, CADD Centre, Lagos, April 2018

Honors and Awards

- ✓ Graduate Student Premier Award (The Capstone Highest Honors), The University of Alabama, March 2025.
- ✓ Outstanding Graduate Teaching Assistant, CCEE Department, The University of Alabama, April 2025.
- ✓ Order of The Engineer, May 2023
- ✓ ASCE i3CE Poster Award, June 2023
- ✓ Regional Finalist, Hult Prize Accelerator, Abuja, Nigeria, January 2019
- ✓ Academic Scholarship, Lagos State Polytechnic, Lagos, Nigeria, April 2015 and April 2017