

Lawal Olarotimi Badru (Preferred Name: Awwal)

 lobadru@crimson.ua.edu

 LinkedIn

 Google Scholar

 ORCID

Summary

My research focuses on developing and evaluating personalized, adaptive delivery systems for supplementary learning materials to support diverse student knowledge levels and preferences in Software Engineering Education, a method termed AI-driven Adaptive Learning Platform.

Education

2023 – present  **Ph.D. Candidate, University of Alabama** Computer Science
Advisor: Dr. Jeffrey Carver
Thesis title: *Learning Beyond the Lecture: Rethinking Software Engineering Education with Supplementary Materials in the Generative AI Era.*

2023 – 2025  **M.S., University of Alabama** in Computer Science.
Comprehensive Exam: *Effective Methods for Teaching Software Engineering.*

2020 – 2023  **M.Sc. by Research, University of the South Pacific** in Computing Science.
Advisor: Dr. Vani Vasudevan
Thesis title: *Intelligent Education Management Information System (IEMIS) for Fiji.*

2008 – 2008  **B.Sc(Ed), University of Ibadan** in Computer Science with minor in Mathematics.

Research Publications

Journal Articles

- 1 **L. Badru** and J. Carver, "Personalizing supplementary materials in software engineering: Impact of preferences, learning styles, and gender," *ACM Transactions on Computing Education*, 2025, In Review.
- 2 **L. Badru**, V. Vasudevan, M. Khan, and G. Lingam, "Mern stack web-based education management information systems for pacific island countries," *SN Computer Science*, vol. 4, no. 1, p. 70, 2022.  DOI: 10.1007/s42979-022-01437-0.
- 3 **L. Badru**, V. Vasudevan, M. Khan, and G. Lingam, "State of education management information system (emis) in pacific melanesia small island developing states (sids)," *Directions: Journal of Educational Studies*, vol. 35, no. 2, pp. 107–118, 2021.

Conference Proceedings

- 1 **L. Badru**, M. An, J. Stamper, and J. Carver, "Optimizing learning: A comparative study of adaptive experiments and randomization in a software engineering course," in *Palermo '25: Sixth Annual Workshop on A/B Testing and Platform-Enabled Learning Engineering (PELE), Learning@Scale 2025*, Palermo, Italy, Jul. 2025.

Work-in-progress

- 1 **L. Badru** and J. Carver, *Personalized support: Evaluating a digital platform for supplementary materials in software engineering education*, Work in progress, 2026.
- 2 **L. Badru** and J. Carver, *What do students really want? a comprehensive survey of learning preferences and supplementary material use in software engineering education*, Work in progress, 2026.

Employment History

2023 – present  **Research Assistant.** Computer Science Department, University of Alabama.

2014 – 2022  **Senior Education Officer / Acting Head, State EMIS**
Ministry of Education, Science and Technology, Abeokuta, Nigeria

- Led the design and maintenance of the Education Management Information System (EMIS) for 1,500+ schools and 500,000 students.
- Implemented an automated Result Analyzer for the Unified Promotion Examination, enhancing data integrity and efficiency.
- Contributed to the Education Policy & Strategy Simulation and State Education Sector Plan (2017–2030).
- Trained 1,000+ personnel as a UNICEF Master Trainer on school record-keeping and census data management.

2016 – 2018  **Assistant Lecturer (on secondment).** D.S Adegbeno ICT Polytechnic, Itori, Ogun State, Nigeria.

2014 – 2016  **Computer Instructor (on secondment).** Staff Development Center, Bureau of Establishment & Trainings, Nigeria.

2010 – 2014  **Master Grade II / Program Analyst.** Teaching Service Commission, Abeokuta, Nigeria.

Skills

Programming Languages	 Python, JavaScript, PHP
Frameworks	 React, Node.js, Express, MOOClet Framework (Adaptive Learning)
Artificial Intelligence	 OpenAI API, Prompt Engineering, AI-generated Assessments, ChatGPT-based Content Creation
Data & Research Tools	 Alteryx, Tableau, Pandas, NumPy, SciPy, Statistical Analysis of Survey Data
Databases	 MySQL, PostgreSQL, MongoDB
Software Engineering Education	 Design of Adaptive Experimentation Platforms, Learning Analytics, A/B Testing for Educational Content

Miscellaneous Experience

Scholarly Contribution

2022  **Reviewer,** Education and Information Technologies, Springer Nature .

Awards and Scholarships

2021  **Research Grant,** Queen Elizabeth Commonwealth Scholarship, United Kingdom (3,000 USD)

2020 – 2021  **Commonwealth Scholarship,** United Kingdom (value-over 50,000 USD), The University of South Pacific, Fiji

2019  **Recipient, The Dean's Award for Academic Excellence and Global Leader Scholarship** (value-£10,000), University of Bath, United Kingdom

Miscellaneous Experience (continued)

2009  **Best Graduating Student, Computer Science Department**(value-500 USD), Tai Solarin University of Education, Nigeria

Certification

2021a  **Predictive Analytics for Business with Alteryx and Tableau.** Awarded by Udacity.

2021b  **Azure Fundamentals expert.** Awarded by Microsoft.

2021c  **Ideas for a Better World: Leading Change Through Policymaking.** Awarded by British Council.

 **Microsoft Certified Professional.** Awarded by Microsoft.

Teaching Experience

2016 – 2018  **Undergraduate Courses:** Advanced Calculus, Assembly Language, Management Information System, Mathematics Methods I, Mathematics Methods II, Functions and Geometry, Object Oriented Visual Basic Programming

2014 – 2016  **Continuing Education & Training Services of Confidential Secretaries course:** Computer Application and Appreciation, Advanced Computer Application

Mentorship and Service

2010 – 2025  Advised and mentored over 100 high school and college students to support their growth into professionals in their respective fields

2024 – 2025  **Volunteer, Alabama Robotics Contest, University of Alabama:** Supported event logistics, set up the robot navigation field area, and contributed to a smooth competition experience

2017 – 2019  **Unicef Master Trainer** on School Records Keeping and Process of Filling Annual School Census (ASC) Questionnaire

2017  Participated in the underwriting of State Education Sector Operational Plan (SESOP) 2017-2021 and 2017-2030 State Education Sector Plan (SESP)

2016  Served as **Technical expert** and populates Education Policy & Strategy Simulation (EPSSim)

Professional Membership

 **Association for Computing Machinery (ACM)**

 **Institute of Electrical and Electronic Engineers (IEEE)**