

OLADELE O CAMPBELL

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PERSONAL PROFILE

I have three decades of experience in computer science education, administration, and research. I am proud to have served as the pioneer Head of the Department of Computer Science at Niger State Polytechnic, where I earned national accreditations and professional recommendations for the academic programs I oversaw. Throughout my career, I have mentored hundreds of CS students and staff, many of whom have gone on to achieve successful careers both locally and internationally. I am deeply committed to conducting research on engaging CS education and am always looking for ways to advance the field through rigorous research and innovative teaching methodologies.

EDUCATION

- PhD** University of South Africa (UNISA), Computer Science Education. 2022
Thesis: "**Impact of Scratch on the Achievements of First-year Computer Science Students in Programming in Some Nigerian Polytechnics**"
Supervisor: Prof Harrison I Atagana
- MSc** University of Ibadan (UI), Computer Science. 2003
Dissertation: "**Algotutor: An Intelligent Tutoring System for Teaching Basic Algorithm Design**"
Supervisor: Prof Charles Uwadia
- BSc** University of Ibadan, Computer Science. 1994
Graduated with Second Class Upper
Supervisor: Prof Babatunde Akinkunmi

HONOURS AND AWARDS

CompEd 2025 African Participation Grant — Awarded from a highly competitive pool, providing a \$150 registration waiver to attend the Global Computing Education Conference (CompEd 2025) in Gaborone, Botswana.

Best Paper Runner-Up, CompEd 25 — Recognised among top submissions for *The Impostor Phenomenon Among Nigerian Computing Students: A Study of Prevalence, Gender, and Academic Progression*, being the first author, with co-authors Sophia Krause-Levy, Leo Porter, Ismaila Temitayo Sanusi, and Oluwatoyin Adelakun-Adeyemo.

2025 Outstanding Reviewer, ACM SIGCSE Technical Symposium

Recognised by the conference program chairs for providing high-quality reviews on four research paper manuscripts submitted to the SIGCSE Technical Symposium 2025.

UNISA Masters & Doctoral Bursary Grant. 2021

Secured this financial support for my PhD study after succeeding in the research proposal module, applying for the grant with the endorsement of my supervisor, and satisfying the UNISA award panel.

Senior Member, Association for Computing Machinery (ACM). 2021

Achieved this membership upgrade after ACM had considered my credentials and contributions to the computing profession during my ten-year membership and the endorsements from three referees.

Ambassador for ACM

Awarded in recognition of my mentoring efforts that inspired some colleagues from Nigeria (especially, Niger State Polytechnic) to join the ACM.

Mobil Producing Nigeria Unlimited Scholar. 1991-1993

Secured a scholarship for the remaining three years of my UI undergraduate study being one of my department's top-performing first-year students and passing an evaluation by Mobil.

Chief of Army Staff Award. 1989

Ranked among the top ten students in Nigeria's Army-owned secondary schools nationwide for exceptional performance in the 1988 West African Examinations Council (WAEC) Ordinary Level (O-Level) examinations.

RESEARCH EXPERIENCE

Principal Investigator | Niger State Polytechnic | Zungeru, Nigeria. | 2025 – Present

- Leading a study titled "*Integrating Professional Dispositions in Nigerian Polytechnic Computing Education: A Framework for Enhanced Graduate Competency.*"
- Designed pre/post-surveys and reflective interventions to assess adaptability, Collaboration, persistence, and self-directed learning in among HND computing students.
- Collaborating with statisticians for mixed-methods analysis (SPSS, R) and contributing findings to global competency frameworks (CC2020).
- Submitted research proposal, secured institutional approval and TETFund Sponsorship of a ₦3.8M budget for the implementation.

Co-Investigator, International Impostor Phenomenon Study | 2021 – 2025

- Led the Niger State Polytechnic site in an international multi-institutional study on the impostor phenomenon among computing students.

- Outcomes: Co-author two accepted publications — one in *ACM Transactions on Computing Education* and one conference paper presented at CompEd 2025 (Gaborone, Botswana; 21–25 October 2025).

PhD student, University of South Africa, Pretoria. South Africa.

Supervisor: Prof Harrison I Atagana

Skill/Accomplishment/Project include:

- Research proposal writing skill/ Completed the PhD research proposal module.
- Research ethics skill/ Acquired ethical clearances from two UNISA institutional ethics committees for my PhD research.
- Quantitative research skill/ Found strong empirical evidence of the educational impact of a constructionist *Scratch* programming intervention over the conventional programming pedagogy from two quasi-experiments involving over 500 first-year Computer Science (CS) students in selected Nigerian Polytechnics located in two north central states lasting two academic sessions.
- Grant writing skill/ Secured a grant of up to R58,071.00 from UNISA.
- Data analysis skills using SPSS and R/Conducted descriptive and inferential statistical analyses of the experimental data.
- Thesis writing skill/ Passed the thesis following evaluations by my supervisor, and three external (national and international) examiners.
- Research article writing skill/ Presented a conference paper and published two research articles in Q1 and Q2 Scopus-indexed journals from my PhD research.

MSc Student, University of Ibadan, Ibadan. Nigeria.

Supervisor: Prof Charles Uwadia

Skill/Accomplishment/Project include:

- Programming skill /Developed a prototype Intelligent Tutoring System.
- Dissertation writing skill/ Passed dissertation.
- Research article writing skill/ Published a research article in a local journal from my MSc research.

BSc Student, University of Ibadan, Ibadan. Nigeria.

Supervisor: Dr Babatunde A. Akinkunmi

Skill/Accomplishment/Project include:

- Questionnaire design / Discovered interesting trends from a survey of organizations in both Lagos and Oyo states and submitted a report of findings to the department.
- Programming skill/ Developed a virtual lab for secondary students in my final year project.

Supervisor: Dr Babatunde A. Akinkunmi

TEACHING EXPERIENCE

Niger State Polytechnic, Zungeru.

Principal Lecturer (Current Position), Dept of Computer Science.

Lecturing experience from May 1995 - till present.

- Taught **SWD 416 — Advanced Data Structures and Algorithms**, a core computing course for second-year Higher National Diploma (HND) in Software and Web Development students, covering graphs (BFS/DFS), sorting and searching algorithms, tree structures (BST, AVL, B-trees), stack and queue variants, and asymptotic analysis; delivered lectures and designed practical labs, designed assessments, and supported students' development of algorithmic problem-solving skills using in-class exercises and their devices (Android phones and laptops).
- Taught **NCC 322 — Cloud Computing I**, a first-year HND course averaging over 40 students per semester, covering cloud fundamentals, service and deployment models, global infrastructure, cloud economics and billing, security and IAM, virtual networking, and content delivery, with hands-on labs using AWS, Microsoft Azure, and Google Cloud.
- Taught **NCC 421— Cloud Computing II** — a final-year HND Networking and Cloud Computing course to cohorts averaging over 40 students per semester, covering AWS architecture and best practices, compute models (EC2, containers, Lambda), storage services (EBS, S3, EFS, Glacier), managed databases (RDS, DynamoDB), load balancing and auto-scaling, monitoring (CloudWatch), security and cost optimisation.
- Taught **NCC 411 — Research Methodology in Networking and Cloud Computing** for first-year HND Networking and Cloud Computing students, delivering lectures and laboratory sessions on research design and experimentation in networking and cloud systems, dataset selection and preprocessing, application of machine-learning techniques, model evaluation and validation, ethical research practice and informed consent, and use of NCC tools and frameworks; developed course materials, practical manuals, and assessments
- Taught **GNS 228 — Research Methodology**, a first-year diploma course for computing students; designed and delivered lectures and practical sessions on project definitions and aims, types of academic projects (research, implementation, case studies, capstone), stakeholder roles and responsibilities, feasibility studies, project planning and reporting.
- Taught **COM 113 — Introduction to Programming**, a first-year college diploma course averaging over 100 students per semester, covering the following topics: algorithms, program design, software development, programming languages, visual basic programming etc.
- Taught **COM 124 — Algorithms and Data Structure**, a first-year college National Diploma (ND) course averaging over 100 students per semester, covering the following topics: arrays, linked lists, stack, queue, graph, algorithms, complexity analysis, sorting and searching algorithms.
- Taught **NCC 313 and SWD 313 — Introduction to C++**, a first-year college Higher National Diploma (HND) course for NCC and SWD students, averaging over 50 students per semester, covering topics such as the structure of C++ programs, basic elements of C++, C++ compilation process, algorithm design, data types, arithmetic operators, input and output, variables, constants, escape sequence, control structures, functions, object-oriented programming, class, objects etc.
- Taught **COM 324 — Introduction to Software Engineering**, a college Higher National Diploma (HND) course averaging over 50 students per semester, covering topics

such as industrial software, software crisis, software quality, requirements analysis, software architecture, software design, software development methodologies (e.g., waterfall, prototyping, spiral, and agile), software testing, etc.

- Taught **CMP 702 — Systems Analysis and Control**, an Uthman Dan-Fodio University-affiliated Postgraduate Diploma (PGD) course averaging over 10 students per session, covering topics such as feasibility study, cost-benefit analysis, requirement analysis, requirement gathering methods, software development paradigms, etc.
- Developed tests, homework, individual or group projects, lab assignments, final exams and rubrics in taught courses.
- Revised the syllabus to meet accreditation standards and students' career or job requirements.
- Coordinated grading of tests, exams and labs with lab instructors.
- Supervised over a hundred PGD, HND and ND students' final-year research projects. A few recent ones are listed below.

Some Postgraduate Diploma Students Supervised

Awodoye Olusegun Joshua, "**Automation of Asset Declaration System for Public Servant**", July 2021

Tanko Asabe Maryam, "**Design and Implementation of a Result Processing and Transcript Generation System (A Case Study of Niger State Polytechnic Zungeru)**", July 2021

Hakilatu Yahuza, "**An Arms and Ammunition Tracking System**", July 2021

HND Students Supervised

Victoria Bolatito, "**Students' Crime Reporting and Complaint App (A Case Study of NSP)**", April 2022

Omitayo Adewumi Emmanuel, "**Biometric and GPS-Based Class Attendance System**", April 2022

Taiwo Abdulmumin, "**A Voice-Aided ATM System for Blind and Visually Impaired Customers of Nigerian Banks**", April 2022

Munir Hussaini Yusuf, "**A Social Network for Niger State Poly (Campus Face)**", March 2021

Elisha Amos, "**Design and Evaluation of an Automated Class Attendance System**", March 2021

Ogezi Moses, "**An Online Recruitment Examination Management System**", March 2021

PROFESSIONAL/ADMINISTRATIVE EXPERIENCE

Developer & Administrator, Final Year Project Topic Submission Portal Department of Computer Science, Niger State Polytechnic, Zungeru May 2025 – Present

- Designed and deployed a digital portal to manage final year project topic submission and allocation for ND and HND Computer Science programmes using Python (with gspread), Google Sheets, and Google Apps Script; ensured seamless integration with Google Workspace and broad accessibility, and migrated the

portal to Render after the Google Free tier expired (deployed at <https://finalyearprojectsportal.onrender.com>).

- Developed functionalities to enforce unique topic selection, dropping of topics, and automatic logging of submissions.
- Improved administrative efficiency by replacing a previously manual and error-prone system.
- Enabled real-time access to topic status by staff and students' project committee members.
- Strengthened transparency and recordkeeping across project supervision processes.
- Developed a mobile-friendly interface to ensure accessibility for students using smartphones, enabling topic registration and status tracking on mobile devices.

PG Coordinator, Dept of Computer Science, Niger State Polytechnic, Zungeru. 2017 – 2023
Skill/Accomplishment/Project include:

- Liaising with the HOD and the Directorate of University Affiliations (DUA).
- Appointing and assigning appropriate resource persons to teach PGD courses.
- Drawing up lecture and exams timetables
- Preparing and presenting PGD semester results at the DUA board meetings.

Acting HOD, Dept of Computer Science, Niger State Polytechnic, Zungeru. 2008 - 2012

Skill/Accomplishment/Project include:

- Pioneered the creation of the Department of Computer Science, laying foundations in the areas of curriculum, facilities and manpower.
- Consulted, planned, organized and supervised staff and students' activities in the department.
- Accelerated a conducive work environment and cordial relations among staff in the department, leading to higher productivity and commendations by the management.
- Maintained academic standards in the department through adherence to the policies of the institution in the admission, lecturing, and assessment of students, leading to higher success rates in courses.
- Recommended and participated in staff recruitment.
- Determined the needs of the department, articulating the same in the annual budgets.
- Ensured the smooth running of activities in the department through the transparent and prudent management of the department's resources.
- Supervised the generation and use of Internally Generated Revenue (IGR) to meet needs in the department.
- Stimulated a positive work environment among the staff by offering various incentives, employing a portion of the department's IGR, thereby enhancing their productivity.
- Submitted annual financial reports to the management, gaining further trust and support.
- Served as a member of the institution's academic board, safeguarding the implementation of academic board decisions in the department.
- Identified the needs of the department and made appropriate recommendations to the management.

- Secured successive accreditations of academic programmes by the national accrediting body.

Acting Coordinator, Computer Centre, Niger State Polytechnic, Zungeru. 1995 - 2008

- Coordinated the activities of the staff of the centre.
- Generated revenue for the polytechnic by engaging in consultancy services such as:
 - Training
 - Troubleshooting and repairing faulty polytechnic or clients' personal computers.
 - In-house assembling of new personal computers for the polytechnic or clients.
 - Networking systems
 - Projects involving the use of application packages such as Word, Excel, and Access.

Head of Section (HOS), Computer Science Section, Dept of Maths, Statistics and Computer Science. 1995 - 2008

- Developed and moderated curriculums for teaching various computer science courses in the dept.

PUBLICATIONS

Journal Publications

Krause-Levy, S., Petersen, A., **Campbell, O. O.**, et al. (2025). Multi-Institutional Study on Impostor Phenomenon. *ACM TOCE*, 25(4), Article 47. <https://doi.org/10.1145/>

Deriba, Fitsum and Sanusi, Ismaila Temitayo and **Campbell, Oladele O.** and Oyelere, Solomon Sunday, Computer Programming Education in the Age of Generative AI: Insights from Empirical Research (July 10, 2024). Available at SSRN: <https://ssrn.com/abstract=4891302> or <http://dx.doi.org/10.2139/ssrn.4891302>

Campbell, O. O., & Atagana, H. I. (2022b). In search of experimental evidence on Scratch programming and students' achievements in the first-year college computing class? Consider these datasets. *Data in Brief*, 45, 108635. <https://doi.org/10.1016/j.dib.2022.108635>

Campbell, O. O., & Atagana, H. I. (2022a). Impact of a Scratch programming intervention on student engagement in a Nigerian polytechnic first-year class: verdict from the observers. *Heliyon*, 8(3), e09191. <https://doi.org/10.1016/j.heliyon.2022.e09191>

Akintade, C. A., Ogbonnaya, U. I., Mogari, D., Ogunrinade, S., & **Campbell, O. O.** (2021). Effect of GeoGebra Software on Basic Seven Students Learning of Linear Graphs in Ogun State. *Journal of Science Education (JOSE)*, 15(1), 95–101.

Akintade, C. A., Ogunrinade, S. O., & **Campbell, O.** (2018). Enhancing students' learning of latitude and longitude through the use of Computer Assisted Instruction (CAI) in Nigerian secondary schools. *Educational Research Journal*, 8(3), 71–77.

Isah, A. D., Aibinu, A. M., Olaniyi, O. M., & **Campbell, O. O.** (2018). Development of Asphalt Paved Road Pothole Detection System Using Modified Colour Space Approach. *The Journal of Computer Science and Its Applications*, 25(2).

Campbell, O. (2013). Deployment of Intelligent Tutoring Systems: Algorithms in Computer Science Education. *Journal of Humanities, Science and Technology (JOHSAT)*, 3(2), 38–55.

Conference Papers

Sanusi, I. T., **Campbell, O. O.**, & Akinrinola, F. Y. (2025). Preliminary insights into computer science teacher-preparation programmes in Nigerian universities. Proc. ACM Global Computing Education Conference (CompEd 2025), Gaborone, Botswana, 23–25 Oct 2025. DOI: 10.1145/3736181.3747141. (CompEd 2025 — papers track acceptance 34.0%).

Campbell, O. O., Krause-Levy, S., Porter, L., Sanusi, I. T., & Adedokun-Adeyemo, O. (2025). The impostor phenomenon among Nigerian computing students: A study of prevalence, gender, and academic progression. Proc. ACM Global Computing Education Conference (CompEd 2025), Gaborone, Botswana, 23–25 Oct 2025. DOI: 10.1145/3736181.3747136. (CompEd 2025 — papers track acceptance 34.0%).

Campbell, O. O., Sanusi, I. T., & Atagana, H. I. (2024). From visual arts to programming: Exploring the impact on achievement in constructionist college CS1 classes. Proc. 2024 Conference on Innovation and Technology in Computer Science Education (ITiCSE 2024), 604–610. DOI: 10.1145/3649217.3653597. (ITiCSE 2024 — paper-track acceptance ≈27%; overall acceptance ≈34%).

Campbell, O. O., Adedokun-Adeyemo, O., Akinrinola, F. Y., Chewachong Akih, P., Tshukudu, E., & Becker, B. A. (2023). The impacts of a constructionist Scratch programming pedagogy on student achievement with a focus on gender. Proc. ACM Global Computing Education Conference (CompEd 2023), Hyderabad, India, 5–9 Dec 2023, pp. 29–35. DOI: 10.1145/3576882.3617911. (CompEd 2023 — proceedings statistics: 33% acceptance).

Campbell, O. (2017). Improving Novice Programming Education in Nigerian Polytechnics: A Work in Progress. Presented at the First Annual National Conference of the School of Natural and Applied Sciences, Niger State Polytechnic, Zungeru.

Isah, A. D. & **Campbell, O.** (2017). Spectral Analysis and Synthesis of Nupe Counts. Presented at the First Annual National Conference of the School of Natural and Applied Sciences, Niger State Polytechnic, Zungeru.

Books

1. **Campbell, O. O.**, Bake, P., Mohammed, A. A., & Dagah, I. A. (2024). *A Guided Introduction to C++ Programming: From Basic Concepts to Advanced Techniques for College Students*. Ahmadu Bello University (ABU) Press, Zaria. ISBN: 978-978-989-866-4.

PROFESSIONAL TRAINING

Foundations of Data Science, Google (Coursera) — Grade Achieved: 91.69% — Completed 21 Dec 2023

Completed an industry-aligned course introducing core data science principles, including the role of data professionals, project workflow planning, and essential data analysis skills as part of the Google Advanced Data Analytics portfolio.

Writing in the Sciences, Stanford University (Coursera) — Grade Achieved: 95.67% — Completed 21 Dec 2023

Completed an online course authorised by Stanford University and offered through Coursera, focusing on effective scientific writing and communication, including manuscript structure, clarity of expression, ethical writing practices, and strategies for reducing writing anxiety.

Foundations: Data, Data, Everywhere, Google (Coursera) — Grade Achieved: 92.40% — Completed 9 Dec 2023

Completed an introductory course on the data analytics ecosystem, emphasizing data literacy, analytical thinking, the role of analytical tools (spreadsheets, query languages, visualization), and foundational data handling concepts.

Supervised Machine Learning: Regression and Classification, DeepLearning.AI & Stanford Online (Coursera) — Grade Achieved: 100% — Completed 9 Aug 2022

Completed the first module of the Machine Learning Specialization, covering supervised machine learning fundamentals with practical training in regression and classification models, Python implementation, and model evaluation techniques.

Research Writing in the Social Sciences, AuthorAid, July 2021

A Seven-week online course by AuthorAid. The grade received: Merit.

PROFESSIONAL AFFILIATIONS

Association for Computing Machinery (ACM), 2011- Present
Senior Member. 2021- Present

ACM Special Interest Group for Computer Science Education (SIGCSE) 2022-Present
Member.

Reviewer, SIGCSE Technical Symposium

Nigeria Computer Society, 2005-Present
Full Member.

PROFESSIONAL SERVICE

Peer-Reviewed Articles for:

- ACM Special Interest Group in Computer Science Education (SIGCSE)
 - 4 Conference Papers Submitted to CompEd 2025 with Submissions Numbers: 76, 153, 175, 187. April 2025

- Koli calling 2024
 - 1 Conference Paper Submitted to Koli Calling 2024 with Submissions Numbers: 31. 28 August 2024

- ACM Special Interest Group in Computer Science Education (SIGCSE)
 - 4 Conference Papers Submitted to SIGCSE Technical Symposium 2025 with Submissions Numbers: 155, 318, 451, 545. August 2024
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- Journal of Medical Artificial Intelligence (AME Publishing Company, Hong Kong, China)
 - Manuscript ID: JMAI-24-156, 3 July 2024.

- ACM Journal: Transactions on Computing Education (TOCE)
 - Manuscript No. TOCE-2023-0129, 07 December 2023

- ACM Special Interest Group in Computer Science Education (SIGCSE)
 - 4 Conference Papers Submitted to SIGCSE Technical Symposium 2024 with Submissions Numbers: 199, 321, 631, 742. September 2023

- ACM Special Interest Group in Computer Science Education (SIGCSE)
 - 2 Conference Papers Submitted to CompEd 2023 with Submissions Numbers: 7866, 8446. June 2023

- ACM. EngageCSEdu
 - Manuscript No. ECSE-2023-0003, 17 March 2023

- SN Social Sciences (Springer Nature)
 - Manuscript No. SNSS-D-22-00984, 16 January 2023

- Journal of Computer Assisted Learning (John Wiley and Sons, US)
 - Manuscript NO. JCAL-22-579, 2 March 2023
 - Manuscript NO. JCAL-22-428, 8 September 2022

- ACM Special Interest Group in Computer Science Education (SIGCSE)
 - 4 Conference Papers Submitted to SIGCSE Technical Symposium 2023 with Submissions Numbers: 9, 131, 288, 318. September 2022
- Computer Science Education Journal. (Taylor and Francis, UK)
 - Manuscript No. NCSE-2020-0048, 26 May 2020
 - Manuscript No. NCSE-2018-0057, 10 July 2018

COMMUNITY SERVICE

Joint Admission Matriculation Board (JAMB)

Computer Professional Registration Council of Nigeria (CPN) **Technical Assistant**, March – April 2020

- Ensured the integrity of the Unified Tertiary Matriculation Examination conducted at the Niger State Polytechnic Computer Based Test (CBT) exam centre.
- Set up and connected the centre's CCTV cameras to ensure the centre was always in the purview of the JAMB control centre in Abuja during the days of the exams.
- Provided written report and electronic record of the exam.

National Board for Technical Education(NBTE)

NBTE Accreditation Resource Person, December 2018

- Participated in the accreditation visit to Jigawa State Institute of Information Technology, Kazaure. Jigawa State. Nigeria.
- Assessed facilities, manpower, curriculum, exams and labs
- Reported findings to the NBTE.

National Board for Technical Education(NBTE)

NBTE Accreditation Resource Person, November 2011

- Participated in the accreditation visit to Akwa Ibom State College of Arts and Science, Nung Ukim. Akwa Ibom State. Nigeria
- Assessed facilities, manpower, curriculum, exams and labs
- Reported findings to the NBTE.

LANGUAGES

English: Advanced Listener and Speaker, Superior Reading and Writing

French: Intermediate Listener, Novice Speaker, Intermediate Reading and Writing

Yoruba: Native speaker

Hausa: Intermediate Listener and Speaker, Novice Reading and Writing.

REFEREES

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