**PERSONAL DETAILs**

# KABIRU AKANDE

PhD, MSc, BTech, CCNP, PMLE, COREN

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## CAREER OVERVIEW & OBJECTIVE

- I am a dynamic professional with extensive experience and expertise in data analysis, machine learning applications and software development. With a very strong mathematical, statistical and software background, I have experience in building, testing, productionising and automating data-driven maintenance of machine learning models and pipelines.

- I have a strong grasp of the fundamentals in my subject area and have a passion for imparting the knowledge to people and experience for effective delivery

- Also, I am a team player, self-motivated, goal-oriented individual with good communication, analytical and time-management skills.

## TEACHING PHILOSOPHY

My teaching philosophies are anchored on the notions of "students as partners" and "students as co-creators of knowledge". In line with the above, I often leverage various student-centered learning techniques to facilitate active student engagement in the classroom to stimulate their interests, improve their knowledge and critical thinking. I have received several positive feedback from students and colleagues alike, while I have also improved my approach over the years.

## RESEARCH INTERESTS

My research interests are multi-disciplinary and cut across the following domains:
- Signal Processing
- Digital Communication
- Digital transformation and innovation
- Software Development and Distributed Computing
- Applied Artificial Intelligence and Big Data Applications

## SKILL SUMMARY

- **Research**: I am experienced in research problem formulation, bid writing, research article publication, quantitative and qualitative data collection & analysis, critical analysis, and the use of Information Technology (IT) and digital tools for research.
- **Technical**: I am competent in software application development, simulation of theoretical analyses, provisioning infrastructure for large scale distributed computing systems and automation of dynamic components
- **Teaching:** I am proficient in the usage of Blackboard, Panopto, Zoom, and Microsoft Team for online lecture preparation and delivery. Also, I regularly use Kahoot (a game-based learning platform) to stimulate students in class. I possess an innate ability, unbridled passion and extensive experience in effective knowledge delivery
- **Presentation**: I have experience presenting technical and non technical materials to differing set of audiences, ranging from business executives, technical stakeholders, colleagues and students at various learning stages

## EDUCATION

**Doctor of Philosophy (PhD)** in Electrical Engineering, University of Edinburgh

- *I published **14 high-impact**, peer-reviewed articles during my PhD.*

SEPT 2012 - DEC 2014

**Master of Science (MSc)** in Electrical Engineering (CGPA of 3.71/4), King Fahd University of Petroleum and Minerals (101 in 2025 QS Ranking), Saudi Arabia

- ***3 US granted patent**s from my MSc research work*
- *Published **10 high-impact**, peer-reviewed articles during my MSc.*

SEPT 2004 - DEC 2009

**Bachelor of Technology (BTech)** in Electrical Engineering (CGPA of **4.29/5**), Ladoke Akintola University of Technology, Nigeria

- *Graduated in the top 2% of the class*

## EXPERIENCE

JAN 2020 - TILL DATE

JOB DESCRIPTION
ROLE

**CODE YOUR FUTURE (CYF)**

**Coding Tutor, Mentor and Technical Writer**
- Teaches disadvantaged students the fundamentals of coding
- Prepared students for technical coding interviews and evaluated their preparedness
- Contributes to CYF knowledge base for proper documentation of effective studying

JAN 2021 - TILL DATE

JOB DESCRIPTION
ROLE

**MEDIUM**

**Technical Writer**
- Disseminates technical project implementation and findings
- Presented complex systems architecture in a digestible format for easy assimilation
- Produced open source code that is easily reproducible to support bootstrapping

NOV 2021 - TILL DATE

JOB DESCRIPTION
ROLE

**OVO ENERGY**

**Senior Machine Learning Engineer**
- Developed a real-time data exchange platform to scale zero-carbon offerings to tens of thousands of customers
- Spearheaded the design and deployment of a data warehouse that integrates with multiple vendor platforms, ingesting large-scale data using GCP to support reporting, analytics, data science, and machine learning teams
- Led MLOps platform implementation on Vertex AI, reducing time to production by 50% and streamlining end-to-end ML workflows. Built secure and scalable model serving microservices with GKE and API Gateway
- Achieved 30% improvement in build and testing workflows by integrating containerisation and CI/CD pipelines
- Developed data pipelines for batch and real-time event processing and analytics using ETL/ELT workflows
- Regularly explained complex architectures and presented ROI of machine learning solutions to senior executives

**SEPT 2009 - NOV 2021**   **UNIVERSITY OF THE WEST OF ENGLAND**

**JOB DESCRIPTION**

**ROLE**

**Research Fellow in Conversational AI**

- Led the technical implementation of the project **Integrating conversational AI and AR with BIM for faster and collaborative on-site construction assemblage** funded by EPSRC @ £1.86million
- Actively Involved in the operations and delivery of UK EPSRC-funded CR&D project on "Conversational-AI with BIM for DFMA Onsite Assemblage" and Innovate UK project on "AI System for Predicting Embodied Carbon (ASPEC) in infrastructure projects".
- Assist in lecture preparation and delivery as delegated by the Laboratory's administration.
- Developing new research ideas, writing manuscripts, and drafting grant proposals.
- Work in a collegiate and cooperative manner with members of the laboratory and other co-workers.
- Research/dissertation supervisor for MSc students and technical supervisor for 3 PhD Students

**JULY 2009 - SEPT 2009**   **MINDFUL CHEF**

**JOB DESCRIPTION**

**ROLE**

**Senior Data Scientist**

- Built a personalised recommender system (**Digital Waiter**) using innovative recipe embeddings (recipe2vector) which increased purchase volume by 35%, retention by 20% and yield £2 million additional yearly revenue
- Developed a decoupled microservice platform serving recommendations via api; saved 10% on integration time
- Provided detailed documentation and tutorial to handover products to team for proper maintenance and effective integration

**NOV 2015 - JULY 2019**   **UNIVERSITY OF EDINBURGH**

**JOB DESCRIPTION**

**ROLE**

**Research Engineer**

- Worked on '5G Rural First', a multi-million dollar project involving a consortium of companies to deliver the first 5G optical (light) communication system to UK rural areas
- Served as technical demonstrator providing support to second year students learning MATLAB and implementation of mixed signal laboratory
- Developed multilayer perceptron models for channel estimation with 5% improvement on state-of-the-art and created a MATLAB application to automate experimental workflows resulting in team's productivity boosted by 50%
- Presented collaborative research output in 8+ international conferences (8 countries and 3 continents)

**SEPT 2012 - NOV 2015**   **KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS**

**JOB DESCRIPTION**

**ROLE**

**Machine Learning Research Engineer**

- Conducted laboratories and module teachings for undergraduate students
- Served as the lead in a three-member team that successfully developed an end-to-end machine learning pipeline that achieve more than 10% accuracy improvement in estimating the physical properties of petroleum reservoir for a major oil and gas company
- Disseminated the results and findings in peer reviewed, top-tier journals
- Obtained 3 US patents granted for an innovative signal processing technique I developed that resulted in 14% throughput improvement in 3GPP LTE communication systems
- Presented my research in international conferences and talks

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| **Nov 2009 - July 2012**<br>**Job Description**<br>**role** | **ITECO NIGERIA LIMITED**<br>**Network Implementation Engineer**<br>▪ Installed structured cabling on new and existing customers' sites<br>▪ Configured and installed Cisco routers and switches on customers' sites<br>▪ Served as support engineer on customers' data centers. |
| **Apr 2012 - Sep 2012**<br>**Job Description**<br>**role** | **MANAGEMENT EDUCATION AND TRAINING LTD**<br>**SAT and GRE Tutor**<br>▪ Prepared students for GRE/SAT verbal and quantitative reasoning scholarship exams<br>▪ Mentor and inspire students to achieve high grades in the scholarship exams<br>▪ Developed comprehensive answers to previous questions to support students' learnings |

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**RESEARCH PROJECTS (5)**

- 5G Rural First; **Total Value:** £16 Million; **Partners:** CISCO, University of Edinburgh, and others; **Funder:** UK Government Department for Digital, Culture, Media and Sport (DCMS); Status: <u>completed</u>; **Role:** Researcher
- AI System for Predicting Embodied Carbon (ASPEC) in infrastructure projects. Funding: £800, 000; **Innovate UK.** Duration: 2020 – 2022; Status: <u>completed.</u> Role: I worked on application development and system architecture.
- Integrating conversational AI and AR with BIM for faster and collaborative on-site construction assemblage. Grant number: EP/S031480/1; Funding:£1,219,545; **The Engineering and Physical Sciences Research Council (EPSRC), UK**. Duration: 2019 – 2022; Status: <u>completed.</u> Role: Technical Implementation Lead.
- Transport Infrastructure Efficiency Strategy (TIES) Living Labs; **Total Value:** £1.2 Million; **Partners:** Costain, DFT, HS2, and others; **Funder:** Innovate UK; Status: <u>completed</u>; **Role:** Technical Implementation Lead
- AI-Enabled Healthy Living Platform for Indoor Air Pollution Analytics and Visualisation (Healthy Air); **Total Value:** £50, 000; **Partners:** Noveltrics, and others; **Funder:** Innovate UK; Status: <u>completed</u>; **Role:** Technical Implementation Lead

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**PROFESSIONAL MEMBERSHIPS**

- Corporate Member, Nigeria Society of Engineers (R49415)
- Member, Institute of Electrical and Electronics Engineers

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**AWARDS, HONORS AND FELLOWSHIPS**

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| **2021** | UK Global Talent Visa, endorsed by Royal Academy of Engineering |
| **2019** | Most Innovative Project Award at S2DS, Europe Largest Data Science Bootcamp |
| **2018** | IEEE International Conference on Communications student grant, Kansas City, MO, USA |
| **2016** | Best Paper Award at International Conference for Students on Applied Engineering (ICSAE), Newcastle, UK |
| **2015** | University of Edinburgh PhD Studentship Award |
| **2015** | University of Edinburgh PhD Studentship full funding |
| **2015** | AT&E Best Paper poster presentation, Aramco, Saudi Arabia |
| **2013** | Third placed in the TMC National Essay competition |
| **2012** | King Fahd University of Petroleum and Minerals MSc Scholarship |
| **2012** | King Fahd University of Petroleum and Minerals Research Assistantship |

**REVIEWER FOR JOURNALS**

- IEEE Access
- Soft Computing
- Applied Soft Computing Journal
- Engineering Applications of Artificial Intelligence
- Journal of Petroleum Exploration and Production Technology
- IEEE Transactions on Cognitive Communications and Networking

**OPEN SOURCE PROJECTS**

- Extensible and Customisable Vertex AI MLOps Platform
- Alexa-type chatbot (Conversational-BIM) with AWS
- Personalised Food Recipe Recommender System (Digital Waiter)
- Named Entity Recogniser

**CERTIFICATIONS AND COURSES**

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|---|---|
| **2023** | Google Cloud Certified Professional Machine Learning Engineer ([Google](#)) |
| **2023** | HashiCorp Certified: Terraform Associate (003) ([HashiCorp](#)) |
| **2021** | Full stack Web Developer, [Udacity](#) Nanodegree |
| **2021** | Front End Web Developer, [Udacity](#) Nanodegree |
| **2021** | Science to Data Science London Bootcamp ([S2DS](#)) |
| **2021** | SQL Intermediate ([HackerRank](#)) |
| **2019** | Python for Everybody Specialisation (5 Courses) ([Coursera](#)) |

- Programming for Everybody (Getting Started with Python)
- Python Data Structures
- Using Databases with Python
- Using Python to Access Web Data
- Capstone: Retrieving, Processing, and Visualizing Data with Python

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| **2019** | Sequence Models ([Coursera](#)) |
| **2019** | Applied Machine Learning in Python **([Coursera](#))** |
| **2019** | Neural Networks and Deep Learning ([Coursera](#)) |
| **2017** | Digital Systems: From Logic Gates to Processors ([Coursera](#)) |
| **2017** | Programming Foundations with JavaScript, HTML and CSS (with Honors) ([Coursera](#)) |
| **2013** | Cisco certified Network Professional (403634801681BRWH) |
| **2010** | Cisco Certified Network Associate Security (404264168290HRZF) |
| **2009** | Cisco Certified Network Associate (402691304182ELCN) |