

# Mcdonald Andrew Mpofu

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## PROFESSIONAL SUMMARY

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Experienced Machine Learning and Software Engineering specialist with hands-on experience in various domains including software development, data science, machine learning, IoT and automation. Adept at translating complex technical concepts into engaging learning experiences for students and developers. Possesses excellent communication skills, allowing for cultivating positive and mutually beneficial business relationships while keeping strong ethics at the forefront. Proven ability to design impactful curricula and deliver hands-on technical training. Passionate about leveraging tech solutions to drive agricultural productivity and youth empowerment. Known for excellent teaching computer science core concepts, programming, and student engagement, among other key areas.

## SKILLS AND COMPETENCIES

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### Technical Skills

- Programming Languages: Python · R · JavaScript · Arduino C++ · Java · HTML/CSS
- ML/AI: Scikit-learn, TensorFlow, Keras, PyTorch, NLP, CNN/RNN, Predictive Modeling, YOLO
- Data Tools: Pandas, NumPy, Spark, Google BigQuery, Tableau, PowerBI
- Databases & Big Data: MySQL · PostgreSQL · MongoDB · Apache Spark
- IoT & Cloud: Google Cloud (Vertex AI, BigQuery), AWS, Arduino, Raspberry Pi, GIS · Proteus · Remote sensing (satellite & drone data)
- Technologies: Firebase · Git/GitHub · Docker · n8n · Camunda 7 & 8 · Apache Kafka · RabbitMQ
- Frameworks: Django · Spring boot · Fast API · Flask · Apache Kafka
- Blockchain: Ethereum/Solidity basics · Smart Contracts · Supply-chain traceability concepts
- Networking & Infrastructure: Routing & switching · Network troubleshooting · VPNs & firewalls
- Design: Figma · Canva
- Productivity Tools: Microsoft Office Suite · Google Workspace

**Soft Skills** Creative thinking, Analytical & problem solving, Curriculum Design, Mentoring & peer tutoring, Excels in oral and written communication, Leadership and coordination, Strategic Planning & Implementation.

## PROFESSIONAL EXPERIENCE

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**GitHub Portfolio:** <https://github.com/XcEland>

### Karibu Tech-AI, (Remote, Johannesburg, Harare), AI Automation and Software Engineer June 2024 – Present

Karibu Tech AI is Full-stack development and consultancy firm specializing in hyper-automation, AI/ML, blockchain, and DevOps for sectors including agriculture, finance, and manufacturing.

- Design, automate, and deploy innovative business processes (e.g., precision agriculture, core banking) using microservices architecture.
- Build AI-driven process automation agents for complex workflows
- Develop machine learning-powered systems for financial credit scoring, fraud detection, and real-time batch data ingestion/storage via distributed pipelines.
- Integrate third party systems
- Digitize client operations to enhance efficiency, productivity, and profitability across industries.
- Maintain and optimize automation workflows, ensuring adherence to clean architecture, standardized data models, and secure API protocols.
- Collaborate in client meetings to align technical solutions with business objectives, leveraging strong communication skills to demonstrate ROI.
- Conducted research on system integrations, scalability, and emerging technologies like blockchain and GIS.
- Design blockchain solutions for transparent supply chain tracking in agriculture and manufacturing sectors.
- Integrated GIS frameworks with ML models to optimize spatial data analysis for precision farming and resource management.

## **University of Zimbabwe UZ, Campus Wide Courses Facilitator Feb 2024 – Present**

Collaborated with the Zimbabwe Centre for High Performance Computing (ZCHPC) to deliver professional certification courses (AI, Big Data, Robotics, Coding) at Zimbabwe's leading university.

- Develop and update course materials, syllabi, and lesson plans aligned with emerging technologies and academic benchmarks.
- Design innovative teaching strategies (interactive workshops, project-based assessments) to improve student engagement and outcomes.
- Deliver seminars and tutorials on programming, machine learning, and GIS to undergraduate and graduate cohorts.
- Mentor students in developing prototype projects for agriculture, mining, and engineering applications.
- Provide technical support, including troubleshooting PC issues and guiding software installation for development environments.
- Prepare comprehensive tutorial notes and assignments using advanced research and technical writing skills.

## **Digital Dynamites Project Manager April 2024 – Present**

Student-led club under the Computer Engineering faculty, fostering technical growth and industry connections.

- Plan and oversee semester-long club projects, ensuring alignment with academic and industry trends.
- Identify and source student opportunities (hackathons, IT competitions, free/affordable-voucher certifications) such as Huawei ICT Competition and Microsoft's Imagine Cup Challenge.
- Coordinate, monitor, and delegate educational sessions to enhance members' technical competencies.
- Recruit industry professionals from partner organizations (e.g., Zim Developers, Impact Hub, Uncommon) to lead skill-building workshops.
- Collaborate with Google Developer Student Clubs (GDSC) to bridge academia-industry gaps through joint workshops and events.
- Create step-by-step enrollment guides to help students secure internships, certifications, and competitions.
- Facilitate structured study groups for certification exam prep (e.g., Huawei HCIA) and competition readiness.
- Conduct in-depth research to prioritize semester projects based on emerging technologies and student interests.
- Serve as a Microsoft Student Ambassador, promoting Microsoft Learn and GitHub Student Developer Pack to 100+ students.
- Organize and lead 3+ hands-on workshops (Azure, Power Platform, Visual Studio Code) for cohorts of 20–50 students.
- Develop a mentorship program pairing senior engineers with junior students for career guidance and skill development.
- Design a centralized digital resource hub hosting workshop material, certification guides, and competition timelines.

## **Izone Hub, Harare, Zimbabwe, Hardware and Software developer October 2023 – November 2024**

Izone Hub is a Zimbabwean entrepreneurship and innovation hub offering pre-incubation and linkage programs.

- Gained hands-on experience with diverse software and IoT hardware systems.
- Conducted workshops for students (primary to tertiary levels), teaching Scratch, Python, and Arduino-based IoT development to address community challenges.
- Authored practical training manuals through strong research and technical writing skills.
- Collaborated on designing, 3D printing, and assembling a brailed keyboard prototype to assist visually impaired individuals with typing.

## **Caleb Royal Institute Math and Computer Science Tutor, Beitbridge – February 2022 to August 2022 (Contract)**

Caleb Royal Institute is a private educational institution in Beitbridge dedicated to fostering academic excellence with a focus on STEM (Mathematics and Computer Science) education.

- Delivered mathematics and computer science lectures and tutorials to Form 1, 2, 5, and 6 classes, adapting teaching methods to diverse learning styles.
- Supervised students' *Continuous Assessment Learning Activities (CALA)* research projects, ensuring alignment with curriculum goals.
- Provided technical support: maintained computer labs, resolved hardware/software issues, installed updates, and configured new systems/peripherals.
- Assisted teachers in integrating technology into lessons, including creating digital resources (worksheets, tests) via Microsoft applications and utilizing online libraries/databases for research.

- Collaborated in staff meetings to review and develop school procedures, emphasizing technology-driven solutions to enhance academic outcomes.
- Mentored students in academic and professional development, fostering critical thinking and problem-solving skills.

### **Teach Me 2, (Cape town, Remote), STEM Tutor May 2020 – February 2022**

Teach me 2 is an educational platform connecting students with tutors to enhance academic performance.

- Tutored 50+ high school students in Mathematics, Physics, Chemistry, and Python, elevating average grades by 2 letter scores; extended support to first-year university students in STEM modules.
- Designed tailored lesson plans, assignments, and tutorial notes using advanced research and technical writing skills.
- Delivered interactive remote sessions via digital tools (graphic tablets, virtual whiteboards) to optimize student engagement.
- Conducted regular assessments, provided constructive feedback, and maintained detailed progress records to track academic growth.
- Collaborated with parents to align tutoring strategies with school curricula and individual learning goals.
- Pioneered a peer-review system for students to enhance problem-solving skills through collaborative learning.

### **Royal Pamper Angels Charity Trust, Project Manager – May 2019 to Jan 2022(Volunteer)**

Royal Pamper Angels was a community-based charity founded with high school classmates to support vulnerable groups, including orphans, the elderly, and under-resourced schools—through donations and outreach. Managed and coordinated online meetings.

- Coordinated and facilitated meetings to ensure effective communication among team members.
- Delegated tasks to volunteers and staff to optimize project execution.
- Organized and managed grocery donation events to support community needs.
- Sought sponsorships and established partnerships with other NGOs to expand the charity's impact.
- Developed and maintained a user-friendly website to promote donation programs, including the "Feed a Child" and "Love Me Campaign" initiatives aimed at combating societal hatred
- Organized community outreach campaigns, increasing public awareness and engagement, which led to a significant rise in volunteer participation and donations.

## **CURRENT PROJECTS**

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### **Farm Co-pilot:**

- Farm Co-Pilot is an innovative agricultural technology initiative developed in response to a call from the Zimbabwe National Geospatial and Space Agency (ZINGSA) and the University of Zimbabwe's innovation program. The project aims to create an end-to-end, real-time, data-driven system that optimizes farming processes from seed to market.
- Designed to enhance farming efficiency by maximizing yields, reducing costs, and establishing reliable markets for produce.
- Key technologies under investigation and implementation include satellite imagery, IoT sensors, and AI-driven analytics.
- The system will undergo pilot testing at the University of Zimbabwe Farm.
- Developed predictive models for crop yield estimation using historical and real-time data.
- Collaborated with agronomists and data scientists to integrate geospatial data for precision farming.

### **Omni-channel Onboarding of clients:**

- This project addresses the challenges of traditional bank onboarding processes by leveraging AI-driven agentic automation. The goal is to enable clients to open bank accounts and perform banking activities seamlessly from any location, embodying an omni-channel approach.
- Implemented AI-powered chatbots to guide customers through the onboarding process, enhancing user experience.
- Integrate identity verification and document upload features to streamline compliance with KYC regulations.
- Developed a centralized dashboard for real-time monitoring of onboarding metrics and customer interactions.

**RECENT ACHIEVEMENTS**

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**Southern Africa Huawei ICT Competition Regional Finalists (Nov 2024 - March 2025):**

- Represented Zimbabwe in the 2024–2025 Huawei ICT Competition (Network Track) after successfully advancing through the Preliminary and National Rounds.
- Led and coordinated a team of three, overseeing preparation, strategy, and execution throughout the competition stages.
- Achieved finalist status in the Southern Africa Regional Finals, competing against top university teams from across the region

**EDUCATION & CERTIFICATIONS**

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- 2025 IT graduate candidate in BSc Honors in Computer Science - University of Zimbabwe
  - ZIMSEC Advanced Level Certificate
  - ZIMSEC Ordinary Level Certificate
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  - Google Cloud Professional Machine Learning Engineer (March 2025 - present)
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**REFEREES**

Available upon request