

# Zharare Kudzaishe

BLOCKCHAIN & AI INNOVATION LEADER · FULL STACK DEVELOPER

21A Weybridge Close, Harare, Zimbabwe

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*"I have not failed. I've just found 10,000 ways that won't work."*

## Summary

Versatile Full Stack Engineer with a comprehensive skill set in developing both client-side and server-side applications. Proficient in a variety of programming languages including JavaScript, Python, and Java, adept at creating interactive, user-centric web applications as well as robust backend systems. Specialized in Machine Learning, leveraging data-driven techniques to build intelligent, adaptive solutions. Additionally, skilled in Blockchain technology, focusing on decentralized applications and digital identity solutions. Committed to leveraging a diverse technological expertise to innovate and deliver high-quality, cutting-edge products.

## Work Experience

### FlexID Technologies. Co., Ltd.

Singapore, Singapore

CHIEF TECHNOLOGY OFFICER

Jun. 2021 - Oct. 2023

- Led the development of FlexID, a digital identity solution using Self-Sovereign Identity standards on the Algorand blockchain, accessible through Android and iOS mobile apps, a web app, and a custodial wallet as a WhatsApp chatbot.
- Ensured compliance with W3C standards, integrating advanced security features like zero-knowledge proofs, selective disclosure, and robust cryptography.
- Implemented a Multi-Party Computation system for decentralized key management, enhancing the security and privacy of digital identities.
- Managed a dynamic tech team of 8, guiding the project from conceptualization to successful deployment, emphasizing agile methodologies and team collaboration.
- Utilized Docker, Node.js, Python, and Solidity in the development process, ensuring a robust and scalable infrastructure.
- Collaborated in designing and maintaining a hybrid infrastructure (Amazon AWS + On-premise) using IaC tools such as Ansible, Packer, and Terraform.
- Developed fully automated CI/CD pipelines for containerized applications using technologies like Docker, AWS ECR, and Rancher.
- Established a centralized logging environment (ELK, Filebeat, CloudWatch, S3) for efficient data aggregation from Docker containers and AWS resources.
- Implemented a comprehensive monitoring system (Grafana, InfluxDB, CollectD) to gather system and Docker runtime metrics.

### The World Bank

Harare, Zimbabwe

SOFTWARE ENGINEER

June 2019 - June 2021

- Contributed to the implementation and enhancement of the DRIVER (Data for Road Incident Visualization, Evaluation, and Reporting) system in Zimbabwe, under the World Bank's initiative for road safety.
- Developed and maintained a web-based, open-source platform for efficient collection, management, analysis, and reporting of road crash data.
- Collaborated with local government agencies and police for real-time geo-referencing of road incidents, ensuring accurate and timely data collection.
- Integrated the platform with an Android mobile application, enabling field data entry and improving the system's accessibility and user-friendliness.
- Enhanced the system's data visualization capabilities, facilitating better understanding and analysis of road safety trends and incidents.
- Implemented features for multi-agency use, allowing various stakeholders to contribute and access vital road safety data.
- Focused on customizing the platform to meet the specific road safety data needs and challenges in Zimbabwe.
- Developed a custom addressing system as an innovative extension to the DRIVER platform, significantly improving upon the accuracy and utility of Google's Open Location Code.
- Engineered the addressing system to provide precise and user-friendly location references, enhancing the effectiveness of emergency response and incident management.
- Ensured data security and user privacy compliance, adhering to international standards and best practices.

## MIT Computer Science and Artificial Intelligence Lab (CSAIL)

Cambridge, Massachusetts, USA

RESEARCH ASSISTANT

May 2018 - Dec 2018

- Developed mathematical foundations and algorithms for the Computational Fabrication Group, focusing on geometry processing, machine learning, real-time simulation, optimization, and inverse design in digital manufacturing and computer graphics.
- Implemented end-to-end systems for various applications including material simulation, color printing, computational design of robots and drones, and computational knitting.
- Conducted advanced research in inkjet printing technologies, creating novel solutions such as silver inks, transparent conducting layers, and UV cured plastics.
- Played a key role in an innovative project that involved mixing new variations of existing solutions and validating their effectiveness in practical applications.
- Collaborated closely with a multidisciplinary team to integrate computational approaches in the design and manufacturing of complex, customized products and solutions.
- Contributed to the advancement of digital manufacturing techniques, setting new standards in precision, efficiency, and customization.

## MIT Spheres Lab

Cambridge, Massachusetts, USA

ZERO ROBOTICS MS MENTOR

Mar 2016 - Aug 2016

- Developed the online game for the Zero Robotics Middle School competition and managed the simulations.
- Mentored students and educators nationwide for the SPHERES ISS (International Space Station) programming challenge, assisting in debugging and refining their programs.
- Co-organized significant events, including the MIT field day in July and ISS finals in August 2016, facilitating smooth execution and participant engagement.

## Hellenic International Academy

Harare, Zimbabwe

INFORMATION TECHNOLOGY TECHNICIAN

Jan 2015 - Aug 2015

- Managed printing of students' termly reports and maintained various ICT equipment, ensuring operational efficiency.
- Provided comprehensive 1st and 2nd line support to academic staff and students, diagnosing and resolving desktop, application, networking, and infrastructure issues.
- Troubleshoot PCs, laptops, and mobile devices, offering timely and effective solutions to hardware and software problems.
- Assisted users in accessing essential software and data, offering support through various channels including face-to-face, phone, email, and remote access.
- Handled the installation of software on staff laptops across departments and assisted in setting up staff email accounts, enhancing overall communication and productivity.
- Ensured the satisfactory operational state of equipment in ICT rooms for both teaching purposes and pupil use, maintaining a conducive learning environment.

## Honors & Awards

2021	<b>WEF Technology Pioneer 2021</b> , Recognized for leadership and innovation in blockchain and digital identity solutions	World Economic Forum
2020	<b>Finalist in #ID4D #MissionBillion Challenge 2020</b> , Recognized by the World Bank for FlexID, a cutting-edge digital identity solution	World Bank
2019	<b>MIT Golden Beaver Award</b> , Presented for exceptional leadership and impact on campus life at MIT as President of the MIT African Student Association	Massachusetts Institute of Technology
2019	<b>Organization of the Year</b> , Awarded by the MIT Office of Multi-Cultural Programs for outstanding commitment to community building, diversity, and inclusion as President of the MIT African Student Association	Massachusetts Institute of Technology
2014	<b>National Olympiads Winner 2014</b> , Awarded for outstanding performance in national competitions	Old Mutual
2014	<b>National Highest in Mathematics and Further Mathematics</b> , Recognized for achieving the highest scores in Zimbabwe's Advanced Level Exams 2014	Advanced Level Exams, Zimbabwe

## Writing

### Applied Mathematics in Pre-Colonial African Settlements

Medium

FOUNDER & WRITER

Jan. 2020 - PRESENT

- Drafted and published a series of articles on African fractals.

## Program Committees

2019	<b>Problem Writer</b> , 2019 Hack4Africa Hacking Competition	MIT
2019	<b>Organizer &amp; President</b> , African Cultural Night	MIT

Education

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Massachusetts Institute of Technology (MIT)

BACHELOR OF COMPUTER SCIENCE

- Specialized in Mathematics with Computer Science, achieving a GPA of 4.7/5.0.
- Served as President of the MIT African Student Association (2018-19)
- Active member of MIT CRU (Campus Crusade) and the Taekwondo Club.

Cambridge, Massachusetts, USA

2015 - 2019

Goromonzi High School

GENERAL CERTIFICATE OF EDUCATION (ADVANCED LEVEL)

- Achieved 4 As (20 Points) in Mathematics, Physics, Chemistry, and Further Mathematics.
- Received national highest scores in Mathematics and Further Mathematics.
- Served as President of the Science Club, leading initiatives and fostering interest in scientific disciplines among peers.

Location

Finished 2014

Skills

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Blockchain & Digital Identity	Algorand, Solidity, Self-Sovereign Identity, W3C Standards, Cryptography, Zero-Knowledge Proofs
AI & Machine Learning	Python, TensorFlow, PyTorch, Predictive Analytics, Data Analysis, Algorithm Development
Software Development	Node.js, Java, Python, Scala, RESTful API, Microservices, Software Architecture
DevOps & Cloud Computing	AWS, Docker, Kubernetes, Terraform, Jenkins, CircleCI, New Relic, Automated CI/CD Pipelines
Web Development	JavaScript, React, HTML5, CSS3, Web Application Development, Mobile Application Development
Project Management & Leadership	Team Leadership, Agile Methodologies, Strategic Planning, Cross-Functional Collaboration
Languages	English, Shona