Zharare **Kudzaishe**

Blockchain & AI Innovation Leader · Full Stack Developer

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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.
- Troubleshot 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	**WEF Technology Pioneer 2021,** Recognized for leadership and innovation in blockchain and digital identity solutions	*World Economic Forum*
2020	**Finalist in #ID4D #MissionBillion Challenge 2020,** Recognized by the World Bank for FlexID, a cutting-edge digital identity solution	*World Bank*
2019	**MIT Golden Beaver Award,** Presented for exceptional leadership and impact on campus life at MIT as President of the MIT African Student Association	*Massachusetts Institute of Technology*
2019	**Organization of the Year,** 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*

Writing

Hexagonal Hierarchies in Space-Filling Curves: A Novel Approach to Urban Geocoding Challenges

Medium

Writer

Jan. 2024

- An address system based on the Gosper Curve

Program Committees

2019	**Problem Writer,** 2019 Hack4Africa Hacking Competition	*MIT*
2019	**Organizer & President,** African Cultural Night	*MIT*

Education

Massachusetts Institute of Technology (MIT)

Cambridge, Massachusetts, USA

Bachelor of Computer Science

2015 - 2019

- 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.

Goromonzi High School

Location

General Certificate of Education (Advanced Level)

Finished 2014

- 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.

Skills

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,.NET, RESTful API, Microservices, Software Architecture
Web Frameworks	Django, Flask, Spring Boot
Web Development	JavaScript, React, HTML5, CSS3, Web Application Development, Mobile Application Development, WordPress,
DevOps & Cloud Computing	AWS, Docker, Kubernetes, Terraform, Jenkins, CircleCI, New Relic, Automated CI/CD Pipelines
Project Management & Leadership	Team Leadership, Agile Methodologies, Strategic Planning, Cross-Functional Collaboration
Languages	English, Shona