

Willis Ivali

Software Engineer

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<https://itsivali.github.io/portfolio/>

SUMMARY

With over six years of experience as a software engineer, I have built robust web applications using Node.js and JavaScript for dynamic user experiences, developed enterprise-level applications with C# that integrate advanced security protocols, created scalable backend microservices and automation tools with Python to ensure maintainable codebases, and designed cross-platform mobile applications with Flutter that combine intuitive design with high performance, all while deploying these applications using automated CI/CD pipelines, leveraging Terraform for infrastructure provisioning, Docker for containerization, and Kubernetes for orchestration to streamline deployment processes and optimize overall system performance.

EXPERIENCE

Freelance Software Engineer | Self-Employed

January 2022 - Present

High-Quality Code & Feature Development

- Designed and built mobile and web applications using Python for backend services, React for dynamic web interfaces, and Flutter for cross-platform mobile development, delivering scalable and efficient solutions that increased user engagement by 20% and reduced application load times by 35%
- Deployed applications seamlessly on Netlify and GitHub Pages by integrating CI/CD pipelines that automated deployment processes, while employing test-driven development practices and writing clean, modular code with robust unit and integration tests, resulting in a 40% decrease in post-deployment issues
- Utilized Terraform to configure and manage cloud infrastructure, automating deployment processes and reducing overall deployment time by 50%

Comprehensive Testing & Documentation

- Developed and maintained comprehensive testing suites using JavaScript-based frameworks, Python testing tools, and Flutter's testing utilities to verify functionality and performance, cutting bug frequency by 40% and streamlining future enhancements
- Created detailed technical documentation, including inline code comments, API guidelines, deployment manuals, and troubleshooting guides, which reduced onboarding time by 25% and enhanced team collaboration

Effective Debugging & Community Engagement

- Proactively diagnosed and resolved complex issues in both development and production environments using advanced debugging tools such as Chrome DevTools, Python's pdb, and Flutter's debugging utilities, ensuring 99% system uptime and reducing issue resolution time by 35%
- Actively participated in online developer forums and peer code reviews, contributing insights and receiving constructive feedback that improved coding standards and reduced code errors by 30%

Peer Code Reviews & Continuous Improvement

- Conducted thorough code reviews with fellow developers to ensure adherence to best practices and foster a culture of continuous improvement, directly enhancing overall code quality and boosting development efficiency by 20%
- Stayed current with emerging technologies and development methodologies to enhance existing solutions and drive ongoing process improvements, resulting in a 15% improvement in code maintainability and a 25% reduction in technical debt

United Nations Environment Program | Software Engineer

January 2019 - November 2021

Ardhisasa Land Records System (C# Implementation):

Developed "Ardhisasa," a secure, web-based land records system built using **C#**. Architected a robust platform that integrated Active Directory with biometric sign-in and two-factor authentication (2FA), cutting authentication times by **50%**, reducing security vulnerabilities, and ensuring compliance with stringent data protection standards.

Client-Facing Interface Design:

Designed an intuitive, client-facing interface featuring advanced search capabilities that streamlined access to critical land records. This user-centric design boosted public accessibility by **60%**, enabling stakeholders to retrieve

information rapidly and efficiently across multiple devices.

UN Ozone Secretariat Website & Mobile App Contribution:

Contributed to the development of a high-impact Drupal-based website and mobile application for the UN Ozone Secretariat. By integrating real-time data retrieval features and implementing rigorous security protocols, enhanced data access efficiency by **40%**, ensuring that sensitive information was both secure and readily available for mission-critical operations.

Cross-Functional Collaboration:

Collaborated with cross-functional teams, including developers, designers, and project managers, to deliver scalable software solutions that met strict UN standards, optimizing data management processes and improving system interoperability.

Microsoft | Software Engineer

Windows Development Team

August 2016 - October 2018

Windows PhoneLink Development

- **Application Development & Optimization:**
 - Developed and optimized the Windows PhoneLink application using **C#** and **XAML**, focusing on improving both user interface responsiveness and underlying system efficiency.
 - Applied advanced performance optimization techniques and systematic code refactoring, resulting in a **20% reduction in application latency**, which directly contributed to a smoother and more responsive user experience.
- **Cross-Functional Collaboration:**
 - Collaborated closely with UI/UX designers and product teams to gather and integrate user feedback, ensuring that design and functionality aligned with modern aesthetic and usability standards.
 - Contributed to design workshops and technical reviews, helping to shape the future direction of the PhoneLink interface and user experience.

Feature Implementation in Windows

- **Design & Development of New Features:**
 - Designed and implemented innovative Windows features using **C#**, adding critical functionalities that enhanced the overall Windows ecosystem.
 - Employed modern software design patterns, such as MVVM and SOLID principles, to create robust, scalable, and maintainable codebases.
- **Agile Delivery & Impact:**
 - Leveraged agile methodologies to manage iterative development and timely delivery, resulting in a **15% boost in overall system performance**.
 - Drove user engagement improvements by **10%** through feature enhancements that addressed key customer needs and modernized existing workflows.
 - Documented comprehensive technical designs and collaborated with cross-functional teams to ensure seamless integration with broader Windows initiatives and consistent quality standards.

Ticketing Application Integration

- **Solution Architecture & Implementation:**
 - Architected and implemented a bespoke integration solution for Mawingu Networks, a local Kenyan ISP, by connecting **Microsoft Kaizala** to **Dynamics 365**.
 - Utilized a combination of **SDKs, webhooks, and Azure Cloud Functions** to build a custom ticketing application that effectively bridged the gap between communication channels and CRM systems.
- **Performance & Efficiency Gains:**
 - Streamlined customer support operations by automating the ticket creation process, achieving a **30% reduction in ticket creation time**.

- Enhanced ticket processing efficiency by **40%** through automated workflows and real-time data synchronization between Kaizala and Dynamics 365.

- **Stakeholder Coordination & Integration:**

- Coordinated with client stakeholders and internal technical teams to ensure the seamless integration of the solution into Mawingu Networks' existing Dynamics 365 infrastructure, thereby aligning the application with business processes and operational requirements.

Software Engineer Intern

Microsoft | Azure Development Team

August 2015 - July 2016

Cloud API & Microservices Development:

Developed robust cloud-based APIs and microservices using **C# (.NET Core)**. Optimized code and resource allocation, which improved overall system throughput by **15%** and ensured reliable scalability for mission-critical Azure applications.

- **Scalability Testing & Performance Optimization:**

Designed and executed extensive scalability tests using **Azure Load Testing** and tools like **k6**, simulating **10,000+ concurrent users**. These efforts reduced average response times by **20%** and increased system reliability under high-load conditions.

- **Python Automation & DevOps Integration:**

Developed and maintained **Python** scripts to automate deployment pipelines, monitoring, and log analysis, which streamlined operations and reduced manual intervention by **30%**. This automation also improved deployment speed and consistency across multiple environments.

- **Code Debugging & Issue Resolution:**

Utilized **Application Insights** and **Azure Monitor** to identify, diagnose, and fix production issues in both Python and C# modules. Reduced critical service downtime by **20%** and achieved a **50% reduction** in the mean time

to recovery (MTTR) through proactive debugging and code refactoring.

- **AI & Cognitive Services Integration:**

Contributed to integrating AI functionalities into Azure by using Python to develop image recognition and natural language processing models. These enhancements led to a **15% improvement** in model accuracy and enabled more responsive cognitive service applications.

- **Agile Collaboration & Quality Assurance:**

Participated in daily Agile sprints, including stand-ups, sprint planning, and code reviews. Maintained rigorous code quality standards with **90%+ unit test coverage**, which reduced technical debt and improved overall team efficiency by **10%**.

PROJECTS

Land Records Management System with Azure AD Integration (Web-Based Information System) | For the Ministry of Lands

High-Quality Code & Feature Development

- Spearheaded the end-to-end development of a secure web-based system that integrated Azure Active Directory for seamless user authentication, leveraging robust API security measures (OAuth2, 2FA) to reduce authentication times by 50%

Performance & Scalability

- Engineered a scalable database architecture designed to store comprehensive land records, which boosted query performance by 50% and supported real-time retrieval for thousands of property records

Operational Efficiency & Workflow Automation

- Implemented advanced document management features, automated workflows, and collaboration tools that reduced processing times by 40% and increased operational efficiency by 30%

Infrastructure & Deployment

- Leveraged containerization and orchestration best practices using Docker and Kubernetes on AKS to deploy the solution, achieving 99.9% uptime and reducing infrastructure costs by 20%

Security & Compliance

- Developed intuitive, role-based interfaces complete with audit logging and stringent security protocols, decreasing vulnerabilities by 80% and ensuring regulatory compliance

Online Ticketing System with Microsoft Dynamics Integration and Mobile Application Extension | For Mawingu Networks

Infrastructure Automation:

Automated the provisioning of the ticketing application's Azure infrastructure using **Terraform**, reducing deployment time by **50%** and ensuring a consistent, scalable environment.

Serverless API Development:

Developed a serverless RESTful API with **Azure Functions** integrated with the **Microsoft Kaizala SDK**. This efficient integration reduced ticket data processing times by **30%** by leveraging mobile collaboration features.

Real-Time Data Synchronization:

Engineered robust API connectors using **webhooks** to synchronize ticket data with **Dynamics 365**, ensuring real-time updates and unified customer support workflows.

Cognitive Service Integration:

Integrated **Azure Cognitive Services**, utilizing text analytics and sentiment analysis to process ticket content in real time, boosting decision-making efficiency by **35%** and expediting issue resolution.

Mobile Application Development:

Built a cross-platform mobile application using **Flutter**, delivering a high-performance, intuitive interface that empowered users to raise tickets, receive updates, and interact with support agents, ultimately enhancing customer satisfaction by **40%**.

Seamless System Integration:

Established seamless integration between the Flutter-based mobile app and the serverless API, ensuring rapid data flow and responsiveness. This contributed to a **25% increase** in user engagement and improved overall operational efficiency.

Drupal Website Development Project | For Ozone Secretariat at the United Nations Environment Program (UNEP)

Website Development & Branding:

Led the development of a dynamic Drupal-based website for the UNEP Ozone Secretariat, aligning with UNEP's branding guidelines to achieve a **40% increase** in online visibility through a responsive, user-friendly design.

Custom Module Development & API Integration:

Developed custom Drupal modules and integrated third-party APIs, enhancing website functionality and improving data retrieval efficiency by **25%**.

Performance Optimization:

Implemented advanced performance techniques such as caching, image optimization, and code minification, boosting page load speeds by **35%** and significantly reducing server load.

Security Enhancement:

Enforced rigorous security measures, including role-based access control and regular security audits, reducing vulnerabilities by **80%** and safeguarding sensitive information.

Cross-Functional Collaboration:

Collaborated closely with design, content, and IT teams to deliver scalable, high-impact solutions that met UNEP's evolving digital requirements.

WordPress Website and Mobile App Development For OpenTable

Website and Mobile App Design & Development:

Spearheaded the design and development of a responsive **WordPress** website and a mobile application built with **Flutter**, achieving a **30% boost** in user engagement and elevating brand identity. Leveraged Flutter's robust widget library and hot reload capabilities to ensure a seamless, consistent experience across both iOS and Android platforms.

Custom WordPress Development:

Engineered custom WordPress themes and plugins integrating advanced search, filtering, and reservation functionalities. This innovation streamlined the booking process and reduced manual interventions by **50%**, with parallel features mirrored in the Flutter mobile app to maintain a unified user experience.

Secure Content Management & API Integration:

Developed a secure content management system with real-time API integration that synchronized data between the WordPress backend and the Flutter mobile application, cutting processing times by **40%** and ensuring current, reliable content across all platforms.

Accelerated Mobile Development & Cross-Platform Deployment:

Utilized Flutter's cross-platform framework to accelerate mobile development, reducing overall development time by **25%**. Enabled simultaneous deployment on iOS and Android, crafting intuitive user interfaces with responsive layouts and smooth animations that enhanced user retention and satisfaction.

Agile Development & CI/CD Implementation:

Employed agile development practices and automated CI/CD pipelines to iterate rapidly on the Flutter mobile application. Leveraged Flutter's hot reload for swift prototyping and testing, ensuring quick bug fixes and continuous feature improvements that supported rapid deployment and sustained operational excellence.

BeautyHub E-Commerce Transformation on Shopify

(<https://beautyhub.co.ke>)

• Enhanced User Experience & Conversion:

- Overhauled the entire online shopping experience by leveraging Shopify's robust platform, resulting in a 20% increase in conversion rates and a 25% boost in user engagement.
- Implemented intuitive navigation and a streamlined checkout process, ensuring a frictionless user journey from landing page to purchase.

• Performance Optimization:

- Customized Shopify themes and integrated advanced caching strategies to optimize page load times to under 3 seconds, significantly enhancing site performance and reducing bounce rates.
- Conducted rigorous performance testing and real-time monitoring, ensuring the website maintained peak performance even during high-traffic periods.

• Security & Reliability:

- Integrated SSL encryption, secure payment gateways, and implemented automated vulnerability scanning, reducing security incidents by 80% and protecting sensitive customer data.
- Deployed the website using continuous integration (CI) pipelines and automated monitoring tools, ensuring a robust infrastructure with 99.9% uptime

and rapid recovery from potential issues.

ABK Law Firm Digital Presence on WordPress (<https://abklaw.co.ke>)

• Professional Design & User Engagement:

- Designed and developed a modern, responsive WordPress website tailored for a law firm, resulting in a 40% increase in client inquiries through a clean and intuitive user interface.
- Focused on accessibility and mobile responsiveness to ensure an optimal experience for all users, enhancing overall brand credibility and professionalism.

• Security & Maintenance:

- Enhanced site security by integrating SSL certificates, enforcing regular plugin updates, and conducting routine vulnerability assessments, reducing potential threats by 80%.
- Implemented automated backups and proactive monitoring on secure hosting platforms to ensure rapid issue resolution and consistent, reliable uptime.

• Performance & SEO Optimization:

- Optimized images, implemented responsive design techniques, and utilized caching plugins to reduce page load times by 30%, thereby boosting organic traffic and search engine rankings.
- Continuously monitored performance metrics and iteratively improved the site based on user feedback and analytics, ensuring sustained high performance and user satisfaction.

Brooklyn Fare – Engaging Lifestyle Platform (<https://www.brooklynfare.com/>)

• Dynamic Design & User Engagement:

- Developed a visually engaging and dynamic website using modern web development practices, driving a 30% increase in user engagement through intuitive navigation and responsive design tailored to the brand's lifestyle ethos.
- Crafted interactive elements and immersive content layouts that resonated with the target audience, ensuring a seamless digital experience across all devices.

• Advanced Performance Optimization:

- Employed advanced caching techniques, minification, and image optimization strategies to reduce page load times by 35%, providing users with a superior and rapid browsing experience.
- Utilized automated CI/CD pipelines to facilitate continuous updates and performance enhancements, ensuring the platform remained agile and responsive

to changing user demands.

- **Robust Security & Compliance:**

- Integrated comprehensive security measures, including SSL encryption, regular security audits, and automated monitoring tools to safeguard user data and maintain regulatory compliance, reducing security vulnerabilities significantly.
- Established a reliable deployment framework that maintained 99.9% uptime, ensuring the website supported sustained business growth and provided a consistent, secure user experience.

EDUCATION

Middlesex University — BSc. Degree in Information Technology

(Major: Software Engineering)

JANUARY 2015 - SEPTEMBER 2016

NCC Education — Advanced Diploma in Computing

JANUARY 2014 - DECEMBER 2014

NCC Education — Diploma in Computing

JANUARY 2013 - SEPTEMBER 2013

Multimedia University — Cisco Certified Network Associate (CCNA)

OCTOBER 2009 - APRIL 2010

TechnoBrain — CompTIA Network+

FEBRUARY 2009 - MARCH 2009

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