

Festus Nzuma

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SUMMARY

Experienced **Data Analyst** and **Software Developer** skilled in both statistical data analysis and software engineering. Proficient in statistical processes such as research design, data collection, statistical visualization, modeling, reporting, and presentation. Additionally skilled in developing full-stack web applications, implementing machine learning models, and deploying scalable solutions on modern cloud platforms.

TECHNICAL SKILLS

Statistical Skills: Research Design, Data Collection, Statistical Modeling, Visualization

Statistical Tools: SPSS, R, Stata, SAS, Python, JMP, SQL, Excel, Power BI, Tableau

Software Development: Full-stack Development, Web App Development (Shiny, Django, Streamlit, node.js, React.js)

Machine Learning: Machine Learning, Deep Learning

Cloud Platforms: AWS, Google Cloud Platform (GCP), Microsoft Azure

Languages & Web: JavaScript, HTML, CSS

Developer Tools: GitHub, GitLab, VS Code

Methodologies: Agile (Scrum, Kanban), CI/CD (GitLab Pipelines), Project Management (Jira)

EXPERIENCE

Data analyst/Software Developer

Jan 2017 – Present

Fesnic Research Solutions

Machakos, Kenya

- Delivered diverse projects across statistical data analysis, machine learning, and web application development, consistently meeting client and research objectives.
- Built a dynamic financial management app with automated income allocation, hierarchical budgeting, transaction tracking, and real-time insights through interactive visualizations.
- Developed a Plumber API to centralize access and automate internal tool interactions, enabling secure and authenticated operations across the Fesnic ecosystem.
- Designed and built a modular Investment Group Management Platform using Shiny to support dynamic group structures. Features included member registration, contribution tracking, loan disbursement, automated merry-go-round scheduling, and audit-ready financial reporting.
- Built a Streamlit-based ML workflow app that lets users upload data, set preprocessing steps, and train models using PyCaret—automating the end-to-end machine learning process.
- Developed the backend for a ride-sharing platform using custom data structures (linked lists, heaps, trees, graphs) to support dynamic fleet management and intelligent ride allocation.
- Developed a maintenance Scheduling Tool for industrial plants using LSTM-predicted Remaining Useful Life (RUL) and cost optimization.
- Developed an intuitive web platform offering step-by-step statistical calculators for hypothesis testing, regression, and more—making complex analysis accessible through a user-friendly interface.
- Performed Thematic Analysis on Ghanaian Breast cancer survey dataset Implemented variations of abundance models to estimate birds' population density in coastal new Zealand
- Modelled the impact of video advertising elements on product reach
- Implemented a machine learning based image classification system for detecting covid 19 from chest X-ray scans
- Implemented a machine learning based fake news detection system for countering fake news propagation on social media.
- Implemented a machine learning based American sign language translator for translating sign language video.
- Developed a correlation analysis web app for ASX-listed Uranium and Lithium stocks, offering visual insights and downloadable reports to support investment decision-making and trend analysis.
- Implemented A Yolo based object detection system for detecting and approximating horse speed on a horse race course.

Business Relations Officer

Aug. 2016 – Dec. 2016

Jubilant Kenya Ltd.

Mombasa, Kenya

- Facilitated access to credit through effective loan disbursement processes, ensuring responsible lending and timely repayments.

- Successfully recruited and onboarded clients, expanding the institution's outreach and improving financial inclusion.
- Oversaw a portfolio of group loans, maintaining performance through diligent monitoring, member training, and issue resolution.
- Managed client relationships, acting as the key liaison between the company and its clients to ensure satisfaction, retention, and trust.

Business Relations Officer Trainee

Apr. 2016 – July. 2016

Jubilant Kenya Ltd.

Mombasa, Kenya

- Successfully facilitated loan disbursements, supporting client growth and financial empowerment.
- Played a key role in expanding the client base through effective recruitment strategies and client engagement.
- Actively promoted the company's financial products and services, significantly increasing brand visibility and market reach.
- Managed a diverse portfolio of group loans, ensuring efficient coordination, compliance, and timely servicing.
- Conducted training sessions for borrower groups, enhancing financial literacy and promoting responsible borrowing practices

Project Management Intern

Dec. 2015 – Apr. 2016

Government of Makueni County.

Makueni, Kenya

- Issued count education bursary applications
- Received and analyzed applications and made recommendations.
- Facilitated county bursary allocation office.

Statistician, Attaché

May. 2015 – Aug. 2015

Government of Makueni County.

Makueni, Kenya

- Monitored and evaluated county socio-economic devolvement projects Assisted in drafting county budget financial year 2015/2016.
- Harmonized and cleansed county socio-economic development projects files.
- Designed and planned employee satisfaction survey.
- Collected and analyzed commodity prices from different towns within the municipality

EDUCATION

South Eastern Kenya University (SEKU)

Kitui, Kenya

B.Sc. in Statistics

Jan. 2012 – Dec. 2025

Thomeandu Boys High School

Makueni, Kenya

Kenya Certificate of Secondary Education

Jan. 2007 – Nov 2010

CERTIFICATIONS

StudySection

Remote

Project Management (Foundation) Certificate

Jan. 2025

- [Credential ID 785745](#)

Codecademy

Remote

Learn Node.js Course Certificate

Sep. 2024

- [Credential ID 66F6B7FD7F](#)

Codecademy

Remote

Learn JavaScript Course Certificate

Sep. 2024

- [Credential ID 66EC88274F](#)

Codecademy

Remote

Learn Intermediate JavaScript Course Certificate

Sep. 2024

- [Credential ID 66E30AAFDD](#)

HackerRank

Remote

R (Intermediate) Certificate

Jul. 2023

- [Credential ID 903310C0AC36](#)

HackerRank <i>R (Basic) Certificate</i> <ul style="list-style-type: none">• Credential ID F9403A2E51D4	Remote May 2023
HackerRank <i>Python (Basic) Certificate</i> <ul style="list-style-type: none">• Credential ID 98C3EC9EFCA2	Remote May 2023
HackerRank <i>Problem Solving (Basic) Certificate</i> <ul style="list-style-type: none">• Credential ID 08928BDD2A1B	Remote May 2023
HackerRank <i>Problem Solving (Intermediate) Certificate</i> <ul style="list-style-type: none">• Credential ID 2AFB0045AB08	Remote May 2023
StudySection <i>R Programming (Advanced) Certificate</i> <ul style="list-style-type: none">• Credential ID 669960	Remote May 2023
StudySection <i>R Programming (Foundation) Certificate</i> <ul style="list-style-type: none">• Credential ID 669792	Remote May 2023
Nairobi Institute of Business Studies <i>Certificate in Statistical Package for the Social Sciences (SPSS)</i> <ul style="list-style-type: none">• Credential ID CERT/1318/14	Ruiru, Kenya Nov. 2014
WINCADD Computer College <i>Certificate in Computer Packages</i> <ul style="list-style-type: none">• Credential ID WCT/024/12	Ruaraka, Kenya Jul. 2012

PROJECTS

Fesnic API <i>R, Plumber API, JWT, AWS, GCP, Firebase, http</i> <ul style="list-style-type: none">• Developed a secure internal REST API using Plumber (R) to unify content delivery, newsletter management, and automation across teams• Implemented JWT-based authentication with role-based access and token refresh mechanisms• Enabled real-time WebSocket notifications for dashboards, alerts, and status updates• Abstracted access to cloud resources (AWS, GCP, Firebase) via a centralized API interface• Designed and validated API contracts, integrated CI/CD pipelines, and trained internal users	March 2025
Finance & Budget Tracker <i>R, Shiny, MongoDB, GCP, Highcharter, JS, CSS</i> <ul style="list-style-type: none">• Developed an interactive budgeting application that automatically allocates income across user-defined financial goals using a hierarchical virtual account system• Engineered an adaptive redistribution engine that rebalances allocations dynamically as goals are met or deactivated• Integrated real-time financial visualizations using Highcharter and ggplot2 to track spending, savings, and goal progress• Implemented persistent data handling with MongoDB and deployed the application via Posit Connect on GCP• Designed a responsive and intuitive UI with HTML, CSS, and JavaScript to ensure seamless user experience	March 2024
E-Learn <i>R, Shiny, HTML, CSS, JavaScript, Shinyapps.io</i> <ul style="list-style-type: none">• Designed and deployed a web-based platform that simplifies statistical analysis through guided, step-by-step calculators for tests such as t-test, z-test, regression, and ANOVA• Structured the app into modular components using shiny.router, enabling scalable routing and smooth navigation across test categories• Implemented statistical logic using dplyr, stats, and ggplot2, with instant computation and inline interpretation of results	July 2024

- Created a responsive, user-friendly interface using HTML, CSS, and Shiny to support non-technical users in academic and research settings
- Deployed the public-facing application on [Shinyapps.io](https://shinyapps.io) and conducted extensive usability testing with student and researcher feedback loops

Investment Group Management Platform | *R, Shiny, MongoDB, Plumber API, GCP, Js* December 2023

- Developed a full-featured Shiny-based web application to manage membership, contributions, loans, and disbursements for investment groups (chamas)
- Integrated MongoDB for transactional data, SQL for logging activities, and GCP for cloud-based backups and storage redundancy
- Implemented automated scheduling for merry-go-round contributions and welfare events with dynamic tracking and alert features
- Built real-time financial dashboards and KPI analytics, with KNN-based mismatch detection for suspicious transactions
- Extended the platform with Plumber API for real-time sync across cloud-hosted files and added deployment via AWS and Posit Connect

Customizable ML Workflow Builder | *Python, Streamlit, PyCaret, Posit Connect* June 2024

- Built a Streamlit-based web app enabling users to upload datasets, define target variables, and configure end-to-end ML workflows without coding
- Integrated PyCaret to automate preprocessing, feature engineering, model selection, and hyperparameter tuning
- Designed modular UI components for interactive data handling and dynamic pipeline configuration
- Enabled model export and download functionality for seamless deployment and reuse of trained ML pipelines
- Deployed the application on Posit Connect Cloud and validated across diverse datasets with feedback-driven enhancements

Hybrid Fake News Detection System | *Python, Shiny, Js, React.js, CSS, XAI, LIME* Nov 2023

- Developed a web-based hybrid system for detecting phishing websites using deep learning, clustering, and probabilistic models
- Implemented real-time phishing classification with interpretable outputs via LIME, enabling users to understand model reasoning
- Built a responsive frontend using Shiny and JavaScript; integrated Python backend for scalable machine learning inference
- Engineered features from webpage content (HTML, text, domain attributes) to support accurate model training
- Adopted Agile methodology with iterative development and sprint-based client feedback to continuously refine functionality
- Deployed system with client-facing UI supporting live detection, transparent explanations, and reliable performance