

Muziwakhe Kulungile Sitsha

AI/ML Engineer | Python Developer | Software development

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SUMMARY

AI/ML Engineer with a strong foundation in software development, skilled at building intelligent systems that deliver operational efficiency and tangible business value. Proficient in architecting end to end data pipelines and scalable cloud infrastructure on AWS/Azure to solve complex challenges like data quality and real time processing. Combines expertise in Python, Java, JavaScript, HTML, CSS and modern data stacks to bridge the gap between analytical models and production systems that drive measurable impact.

CORE SKILLS AND TOOLS

- **AI/ML & Data Science:** Scikit-learn, TensorFlow, PyTorch, Predictive Modelling, Statistical Analysis, Feature Engineering, Natural Language Processing (NLP), Large Language Models (LLM's)
- **Software Development:** Java, Spring Boot, RESTful API Design, Object-Oriented Programming (OOP), Hibernate
- **Data Engineering & ETL:** Python (Pandas, NumPy), ETL Pipeline Design, Database Design & Optimization
- **Web & Application Development:** Flask, FastAPI, Streamlit, React, HTML5, CSS3, JavaScript, Thymeleaf
- **Cloud & DevOps:** AWS, GCP (Learning), MLOps, CI/CD, Docker, Vercel, Netlify
- **Tools & Methodologies:** Git, GitHub, Model Versioning

WORK EXPERIENCE

Administrative Assistant and Junior Technical Duties | Alitsha Projects | 2022 – 2024

- Streamlined administrative and data management processes, including digital filing systems and reporting, improving organizational efficiency and data accessibility.
- Utilized business software suites for invoicing and document preparation, developing proficiency in translating operational needs into structured digital formats.
- Served as a communication hub, professionally managing correspondence and directing information flows between different stakeholders.

AI Engineering Apprentice | Project Y | Nov 2025 – Present

- Currently immersed in an intensive apprenticeship program, beginning with a two-month bootcamp covering core fundamentals in **AI Engineering, Data Engineering, and Cloud Engineering**.
- Specialized in the **AI Engineering stream**, applying machine learning and software development principles to build and deploy intelligent applications.
- Developing production-ready AI solutions, focusing on end-to-end pipeline development, model integration, and scalable system architecture.

FEATURED PROJECT

AI Health Predictor | *Machine Learning Web Application*

- Engineered a predictive healthcare system using Scikit-learn/TensorFlow to analyze patient data and assess risk factors.
- Developed and containerized a full-stack application with a Flask/FastAPI backend and interactive React/Streamlit frontend for real-time predictions.
- Implemented an automated MLOps pipeline on AWS/GCP for model training, versioning, and deployment, improving

update efficiency by 30%.

Medical Record Management System | *Enterprise Software & Data Pipeline*

- Architected a secure, Java Spring Boot backend with JWT authentication and role-based access control (RBAC) for managing sensitive patient data.
- Designed efficient MySQL database schemas and RESTful APIs to handle complex patient records, appointments, and digital prescriptions.
- Built foundational ETL pipelines for data aggregation and reporting, feeding a React-based analytics dashboard for medical insights.

Data Engineering Learning Projects | *ETL & Cloud Infrastructure*

- Developed Python scripts using Pandas and NumPy to automate data extraction, cleaning, and transformation from diverse sources.
- Designed and optimized SQL queries and database structures to ensure data integrity and support complex analytical requests.
- Explored AWS cloud services (S3, EC2, Glue) to build scalable data infrastructure and understand distributed processing concepts.

Student Management System | *Full-Stack Web Application*

- Led full-stack development of an educational platform using Java Spring Boot, Hibernate, Thymeleaf, and MySQL.
- Implemented a multi-role system (Admin/Teacher/Student) with features for course enrolment, automated grade calculation, and fee management.
- Created intuitive user interfaces and robust backend logic, improving operational efficiency for academic administration.

Cerati Engineering Website – Freelance Client Project | *Full-Stack Development*

- Developed and deployed a modern, responsive company website from concept to production on Vercel, successfully delivering on client specifications and branding.
- Built a clean front-end with TypeScript and React, managing the full development and deployment lifecycle.
- **Tech:** TypeScript, React, Vercel.

EDUCATION

- **Relevant Coursework/Training with Certifications:** Machine Learning, Data Engineering Principles, Software Development, Cloud Infrastructure, Artificial Intelligence
- **Diploma in Systems Development** | Boston City Campus & Business College
Expected Graduation: 2026
Johannesburg, South Africa
Relevant Coursework: Software Engineering, Database Design, Data Structures, Web Development, Systems Analysis.