

# AMEER AKECH

## Data Engineer

 [ameerakech@gmail.com](mailto:ameerakech@gmail.com)

 [GitHub](#)

 [Portfolio](#)

### EDUCATION

AkiraChix  
codeHive - Diploma in Information Technology  
2025 - Present

### SKILLS

Programming Languages: Python, SQL

IoT communication Protocol

Data handling and visualisation

Sensor selection and interfacing

Libraries and frameworks: Pandas, NumPy, Matplotlib, Seaborn, FastAPI, Django REST Framework

Tools: Tinker CAD, Onshape, HiveMQ, Jupyter notebook, Google Colab, GitHub

Database management system: DBeaver

### COURSES

- Frontend Web Development
- UI/UX Research
- Backend Development
- Quality Assurance
- Product Management
- UI/UX Design
- Data and Software Architecture
- Frontend Mobile Development

### REFEREES

1. Brian Ngaira  
Director of Design, Made by People  
[brian@made.ke](mailto:brian@made.ke)

2. Caroline Mutua  
Product Manager - Microsoft  
[mutua.caroline@gmail.com](mailto:mutua.caroline@gmail.com)

### PROJECTS

1. [FruitGuard](#)

2. [iRecycle](#)

### PROFILE

Fashion is an innovative field that re-imagines possibilities. Ameer has a deep passion for fashion that extends beyond style, fueled by how technology is transforming the industry. She finds inspiration in timeless designs and vibrant colors, appreciating how they reflect personal expression and identity. For Ameer, the combination of creativity and technology within fashion opens up exciting opportunities to shape the future of how we dress.

### EXPERIENCE

#### 1. FruitGuard

Developed FruitGuard, an IoT system that monitors fruit fly trap levels and sends SMS alerts to smallholder mango farmers. This reduces pesticide use, protects the environment, and saves labor by enabling timely pest control.

##### Approach and key Insights

- Designed and implemented a real-time IoT data pipeline that increased data handling efficiency for ESP32-based sensors.
- Developed backend monitoring logic that detected safety threshold breaches with accuracy and delivered real-time alerts.
- Optimized real-time streaming by introducing a WebSocket server to send data continuously to the Frontend, improving reliability and reducing latency before persisting it to Backend endpoints.
- Tested routing sensor data directly from HiveMQ to the backend, but identified latency issues, which validated WebSockets as a faster transport layer.
- Implemented MQTT communication via HiVeMQ, ensuring efficient and faster sensor data delivery.
- Enabled continuous monitoring by maintaining seamless sensor data flow between the IoT device, Frontend, and Backend.
- Structured and stored sensor reading data in PostgreSQL.

#### 2. Titanic survival rate prediction

Developed a machine learning model to predict Titanic passenger survival rates based on demographic and travel data. Applied data preprocessing, feature engineering, and supervised classification algorithms to achieve high prediction accuracy.

##### Approach and key Insights

- Worked on cleaning and preparing the Titanic dataset to build a model predicting passenger survival.
- Cleaned the dataset using Pandas by identifying and removing blank fields to ensure data completeness, preventing errors during analysis and modeling.
- Applied capping techniques with NumPy to mitigate the influence of extreme values on model performance while preserving valuable data.
- Created visualizations using Matplotlib and Seaborn to analyze feature distributions and their relationships with survival outcomes under supervised learning.
- Conducted correlation analysis with Seaborn heatmaps to highlight relationships among key features such as age, fare, passenger class, and survival status, supporting informed feature selection.
- Trained a Logistic Regression model to predict survival outcomes based on selected features, leveraging the model's interpretability to understand feature impacts and achieving strong predictive performance validated through cross-validation.