Summary

Software Engineer specializing in web services, API integrations, back-end, front end and mobile applications development. Experienced with all stages of the development cycle for dynamic web projects. Well-versed in numerous programming languages and strong background in integrating with third party systems through API/Web services as well as interfacing with customers during problem solving.

Skill Highlights

|  |  |
| --- | --- |
| * Strong decision maker * Create complex algorithms * API/Web service development * Database change management * Data cleanup * Data warehousing | * Creative design * Innovative * Service-focused * Amazon web services * Code quality with sonarqube * Unit & integration testing * DevOps |

Experience

**Senior Software Engineer, Tugende Limited**

10/2021 to date

**Senior Software Engineer, Burn Manufacturing USA LLC**

10/2020 to 07/2021

**Senior Software Engineer, Fenix International**

10/2019 to 08/2020

**Java Backend Developer, Awamo (U) LTD**

02/2018 to 09/2019

**Software Engineer, YoDime / Pahappa (U) LTD**

09/2015 to 12/2018

Education

* **Makerere University (2014)**

Bachelor of Science in software engineering

Referees

**Mr. Anand Nandanan**, Electrical Eng. Coordinator, Fenix Int’l [anand.nandanan@hotmail.com](mailto:anand.nandanan@hotmail.com) | +256 789 897 795

**Mr. Nsumba Solomon,** Software Engineer, Artificial Intelligence & Data science lab Makerere University | [snsumba@gmail.com](mailto:snsumba@gmail.com) | +256 782 984 765

**Mr. Ntende Kenneth**, Founder Monkeypesa Limited [ntk0008@gmail.com](mailto:ntk0008@gmail.com) | +256 757 537 658

**KAYONDO UMAR**

Contact

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Languages

* English
* Luganda

Programming Languages

* Java
* Java Server Faces (JSF)
* Java Server Pages (JSP)
* JavaScript
* Prime Faces Libraries
* Smart GWT
* Spring Framework
* Spring Boot/Microservices
* Hibernate/JPA, HQL
* MYSQL
* Liquibase
* HTM5, XHTML, XML, CSS
* JSON
* Amazon web services
* Git, Maven
* JIRA, Slack, Microsoft teams
* Android with architectural components
* C# .NET Core
* Python
* Django
* React
* Angular
* Django Rest Framework
* SQLAlchemy
* Data Warehousing with Amazon Redshift
* DevOps

Projects

**Tugende Limited**

I am a senior software engineer for Tugende limited working on a number of projects. As a senior software engineer at Tugende, I am also the lead DevOps engineer and a Data warehouse manager. I worked with a team of software engineers on a number of micro-services, which include the following.

1. **Data warehouse**

I was the lead developer during the development of the data warehouse. On this project, I setup up the data warehouse configuration using Amazon Redshift, Amazon S3 buckets, and AWS Lambda function. On top of the setup process, I also performed the following tasks:

* I wrote the AWS lambda function used to move data from the AWS S3 buckets into the Redshift cluster.
* I wrote all the AWS lambda functions used to extract analytical benchmarks from the data imported into the Redshift cluster. Among them, we had the following benchmarks;
  + Daily loan books benchmarks
  + Weekly loan books benchmarks
  + Monthly loan books benchmarks

1. **Client Facing Mobile Application**

I was the lead developer during the development of the client facing android application used by clients to monitor their loans, make payments against their loans, and refer other people to Tugende and many other functions. I this project, I performed the following tasks;

* Setup the project structure and standards using Android architectural components
* I implemented the signup workflow process including the integrations with the backend system(s).
* I implemented the login workflow process including the integrations with the backend system(s).
* I implemented the workflow process followed when the client is making a payment against their loan.
* I implemented the workflow process followed by the guarantor when they are making a loan repayment for any of the person(s) they guaranteed for a loan.
* I implemented the workflow process followed when the person is applying for any of Tugende’s special offers for example second hand products, cash loans and many more.
* I implemented the screens used when the client is viewing their loan details, transactions and current T-score balance.
* I implemented the Alumni profile management screens and integrations with the backend system(s).

1. **Notification micro-service**

I was the lead developer during the development of the notification micro-service that is used to send out SMS messages, Email messages and firebase messages. On this project, I performed the following tasks:

* I implemented the service used to send SMS messages through Africa is talking API.
* I implemented the service used to send email messages through the SendGrid API.
* I implemented the service used to send email messages through Amazon SES.
* I implemented the service used to send firebase messages through the google API.
* I implemented the background jobs used for sending SMS messages, Email messages and Firebase messages.
* I implemented the background jobs used to notify the message broker (Kafka) when a message is sent to the recipient.
* I implemented the background job used to check wallet balance(s) on the Africa is taking API.

1. **T-Bank Micro-service**

I was the lead developer during the implementation of the T-Bank micro-service that is used to reward good performing customer. On this project, I performed the following tasks:

* I implemented the service and background job used to download good performing customers from Salesforce.
* I implemented the service and background job used to reward customers who have reached the first milestone.
* I implemented the service and background job used to reward customers who have reached the second milestone.
* I implemented the service and background job used to reward customers who have reached the third milestone.
* I implement the services and endpoints used by the USSD application when the client is redeeming their rewarded coins.

1. **Microsoft Dynamics Broker Micro-service**

I was part of the team that developed the micro-service used for connecting to Microsoft dynamics. On this project, I performed the following tasks:

* I implemented the service and endpoint used when creating a sales order.
* I implemented the service and endpoint used when checking the status of a sales order.
* I implemented the service and endpoint used for creating a contract invoice.
* I implemented the service and endpoint used for creating a free text invoice.
* I implemented the service and endpoint used for obtaining an authentication token used for accessing Microsoft dynamics endpoints.

1. **Loan Management System**

I was the lead developer during the development of the loan management system. This system is used to manage the loan accounts. On the project, I performed the following tasks:

* I implemented the service(s) and endpoints used to manage a branch/office to which a client belongs i.e. save/update a branch, get list of branches
* I implemented the service(s) and endpoints used to manage currencies i.e. save/update a currency, get list of currencies.
* I implemented the service(s) and endpoints used to manage loan payment types i.e. save/update a payment type, get list of payment types.
* I implemented the service(s) and endpoints used to manage general ledger accounts i.e. save /update a general ledger account, get list of general ledger accounts.
* I implemented the service(s) and endpoints used to manage loan charges i.e. save/update a charge, get list of charges.
* I implemented the service(s) and endpoints used to manage loan transaction processing strategies i.e. get list of loan processing strategies.
* I implemented the service(s) and endpoints used to manage a loan product i.e. save/update a loan product, get list of loan products.
* I implemented the service(s) and endpoints used to manage lookups i.e. save/update a lookup, get list of lookups.
* I implemented the service(s) and endpoints used to manage journal entries i.e. get list of journal entries.
* I implemented the service(s) and endpoints used to manage loan transactions. For example:
  + Make loan pre-payment
  + Make repayment
  + Get loan transaction by Id
  + Get a list of paginated loan transactions
* I implemented the service(s) and endpoints used to manage a loan account. For example:
  + Create a new loan application
  + Update/edit a loan application
  + Reject loan application
  + Approve loan application
  + Withdraw loan application by the client
  + Write-off loan account
  + Disburse loan account
  + Close loan account
  + Transfer loan account from one branch to another
  + Assign a loan officer to loan account
  + Undo loan approval
  + Undo loan rejection
  + Undo loan withdrawal
  + Undo loan write-off
  + Undo loan disbursement
  + Undo loan officer assignment
  + Get a list of loan schedule
  + Get a list of loan charges
  + Get a list of loan transactions
  + Get a list of loan officer assignment history

**Burn Manufacturing USA LLC – PayAsYouGo Platform (PAYG)**

I was a senior software engineer for Burn manufacturing company working on a software platform named PAYG. PAYG is an easy-to-use management solution used for managing customer profile, service payments in the form of mobile money (M-PESA).

As part of my tasks:

* Creation of models and business logic for the PAYG platform (business rules application).
* Development of the data base & AWS / Linode interface using SQLAlchemy.
* Creation of unit tests for the payments gateway microservice and the PAYG platform and all other functionalities developed.
* Development of a payments gateway that integrates with local payments service providers (receiving payments and triggering messaging using Command & Event design pattern).
* Review and transmission of software development and coding best practices.
* Code review of code produced by any programmer in the team implementing python coding best practices.
* Development of user interfaces using HTML, CSS, and JS.

The PAYG platform is developed using Django framework.

**Fenix International – Clean Cooking CRM**

I was a senior software engineer for Fenix International working on a CRM used in the clean cooking department. On this CRM, I worked with a team of developers on a number of application modules/micro-services which included the following;

1. **Client Onboarding Module**

We implemented a client onboarding module used to collect and manage customer profiles, customer accounts, next-of-kins and product assignments for clean cooking.

I implemented these workflows: customer onboarding, customer account creation, activation and deactivation, data migration of old customer details from the legacy system into the MIS.

In this module, I also implemented customer production associations and replacements. I also developed a number of web services used to communicate with this module.

1. **Payments Module**

We implemented a payments module used to collect mobile money deposits from customers, perform customer account refunds and account balance reconciliations for clean cooking.

I developed the web service connection between the MIS and YO!-Uganda payments gate to facilitate the collection of customer account initial deposits using mobile money (MTN and Airtel) into the online account held at YO!-Uganda.

I also developed a web service notification listener used to receive cooking time purchase transaction posted by YO!-Uganda into the MIS. This web service also generates cooking time tokens and forward it to the customer using an SMS gate designed in the notification module.

I also implemented the functionality used to refund customer account initial deposits when closing a customer account.

1. **Logs Module**

We implemented a logs module that is used to collect and interpret device logs downloaded from clean cooking's controller devices used to monitor and regulate gas intake through the cooktop.

I developed functionality to upload both raw text and excel log files using the MIS.

I implemented functionality to process the uploaded log files into meaningful cooking events as specified by the firmware device logging codes.

I also implemented functionality to generate cooking sessions from the processed log file events for further analysis.

1. **USSD Menu API Web Services**

We implemented the USSD menu web services used to manage all content exchanged through clean cooking's USSD Menu**.**

I implemented the following web services for the USSD menu:

* Authentication web services used to the USSD menu to obtain access to the customer account details.
* USSD menu attempted payments into the MIS for further analysis.
* Web service for getting customer account loan details
* Web service for receiving USSD menu sessions from YO!-Uganda into the MIS
* Get last tokens web service used to return the customer’s last 5 tokens displayed on the USSD menu
* Get customer account product loan balances for accounts with active loans

1. **Notification Module**

We implemented an SMS notification sub-system for clean cooking. The platform is used to send cooking tokens to the customer after a payment is received by Fenix International’s clean cooking payment portal.

I implemented the message-sending engine used to send both single and scheduled messages to more than one recipient.

The following are the message processing engines I worked on in this module;

* Active customer account broadcast messages
* Pending/prospective customer account broadcast messages
* Free token/cooking time messages
* Uncategorized messages sent to a list of phone numbers unknown to the MIS

I also developed a web service used by other modules to send SMS messages through the notification module.

1. **Business Intelligence Reporting Module**

We implemented an SQL processing engine used to generate downloadable csv reports for clean cooking.

The platform is used to process complete SQL queries into easy to understand tables with the ability to download the displayed data in csv files.

I implemented a number of downloadable SQL reports used by the operations team, business development team and the commercial team.

1. **Clean Cooking Purchases Promotions Module**

We implemented a purchase promotions module for clean cooking. The platform allows the business to reward its customers based on the monetary value of cooking time (FT) purchased.

I implemented the ability to create, activate or stop a running promotion in this module.

I implemented a workflow used to generate customer account rewards based on the nature of running promotions in the MIS.

I implemented functionality to terminate an active promotion instance.

I implemented functionality used to send an SMS containing free cooking time to a customer once they have reached the maximum purchase amount specified in the promotion criteria.

I also developed web services used to create, active or stop a promotion

1. **Pricing and Contracts Module**

We implemented the pricing and contracts module for clean cooking. The platform is used to create customer account contracts, manage customer account loan deposits and loan balances.

I implemented functionality to create customer account contracts based on the customer’s preferred pricing scheme.

I implemented a workflow used to update customer account loans after purchasing cooking time. This also included closing a loan once its outstanding amount is completed.

I implemented web services; create customer contracts, access created contract information and update contract images.

1. **Fumba Mobile Application**

We implemented the mobile application for clean cooking. The mobile application performs the following activities: client onboarding, customer account creation, account activation, product assignment and replacements, collect mobile money deposits from customers, logs collection and customer account deactivation

I implemented the following components in the mobile application;

* Authentication workflow
* Leads/prospect registration
* Customer registration and profile updates
* Account creation, activation and deactivation
* Product assignment and replacement
* Initial deposit collection
* Logs collection.

**Awamo (U) LTD – Core Banking System (Awamo360)**

I was a senior java backend developer for Awamo (U) LTD working on a software platform named Awamo360. Awamo360 is an easy-to-use and affordable microfinance management solution used by MFIs, SACCOs and VSLAs. The platform has a number of modules: Savings account management, shares accounts, loans, account transfers, SMS notifications, reporting, etc.

As part of my tasks:

* I provided software code review, code quality control, unit and integration testing, client system support, troubleshooting and fixing various business account errors.
* I implemented the shares module. This involved creation, approval, rejection of share accounts. I also implemented functionality to buy more shares and redeem shares at maturity.
* I implemented the account transfer module. This involved ability to transfer funds between one or more individual savings account, transfer from an individual savings account to a group savings account, funds transfer from an individual account to an institution savings account.
* I worked on a number of bug fixes ranging from software improvements, database migrations and troubleshooting errors identified on various customer savings, shares, loans or fixed deposit accounts.
* I implemented an SMS notifications engine used in various ways. These included:
* One-time password (OTP) verification used to verify customer phone number
* Send out SMS notifications after a savings account deposit, withdraw, or account transfer
* Send out an SMS notification after a customer’s loan is disbursed
* Send out overdue loan SMS notifications for accounts with outstanding balances
* Send out an SMS notification after a loan repayment
* I also worked on a number of other company products that included, Biometrics system, Authentication system, and partly on the Amazon cloud platform.

**YoDime / Pahappa (U) Ltd**

I was a lead developer for YoDime (U) Ltd working on a number of projects. YoDime was a mobile payment gateway that facilitated utility bills payments, bulk payments, and merchant API integration. In YoDime, I led a team of developers on a number of projects which included the following;

1. **Mobile Money Bulk Payments**

I led the developers that integrated MTN mobile money, Airtel money, Africell money & Smart Pesa into the YoDime payments platform.

I implemented all the required API integrations used to perform mobile money transactions through the following networks:

* MTN mobile money
* Airtel money
* Africell Money
* Smart Pesa

I also implemented functionality to facilitate sending money to one or more recipients in a single batch.

The platform was developed in Java frameworks such as; spring, Hibernate/JPA, JSF, HTML5, CSS, and JS.

1. **Merchant API Web Services**

I led the developers that developed merchant APIs used by external systems to receive mobile money payments, purchase Airtime, Data, pay water bills, electricity bills, pay tv subscriptions through YoDime’s payment gateway. The API web services offered both JSON and XML endpoints.

I implemented both the XML and JSON web services used to perform the above payments through the payment gateway.

I developed an API documentation used by external developers when integrating with YoDime’s payment gateway.

1. **Cyclos Payment Software Integration**

I led the developers that integrated Cyclos web services into YoDime’s Payments Gateway.

I implemented the web service connections used to manage customer accounts, accounting, charges/commission, report generation and data transfers between YoDime and the cyclos web processing interfaces.

I also performed cyclos administrative setup and management.

1. **Payments Gateway**

I led the team that developed a payments gateway for YoDime (U) LTD. The gateway was used by both personal and merchant accounts to perform Airtime, Data, Water bills, Yaka, Pay-Tv payments through YoDime’s payments gateway

I also was the lead developer on the team that implemented the mobile application used by merchants to perform payments. The mobile application uses web services to facilitate payments.

I implemented API integrations used to make the above payments through the following gateways:

* Pegasus API gateway
* YO!-Uganda
* MCash
* Payway
* True African
* Interswitch
* MTN Uganda Airtime
* Airtel Uganda (Airtime & Data)
* Africell Uganda (Airtime, Data & Mobile Money)
* K2 Airtime

The platform was developed in java frameworks such as; spring, Hibernate/JPA, MYSQL, JSF, HTML5, CSS, and JS.

1. **External API Integration**

I was the lead developer on the team that integrated a number of external web services into YoDime's platform.

I implemented API integrations used to make transactions through the following gateways;

* Pegasus API gateway
* YO!-Uganda
* MCash
* Payway
* True African
* Interswitch
* MTN Uganda Airtime
* Airtel Uganda (Airtime & Data)
* Africell Uganda (Airtime, Data & Mobile Money)
* K2 Airtime
* Smart Telecom (Airtime, Data & Mobile Money)

**Pahappa (U) Limited**

I was a lead developer for Pahappa (U) Ltd working on a number of projects. In Pahappa, I led a team of developers on a number of projects, which included the following

1. **SMS Gateway**

We implemented a bulk SMS messaging gateway for Pahappa (U) LTD.

I implemented functionality used to send messages to more than one recipient, functionality to schedule SMS messages to be sent out on a given days of the week.

I implemented reports used to track the status of both pending and sent out messages through the gateway.

I also implemented web services used by external systems to send messages through Pahappa’s SMS platform.

1. **Micro Project MIS for the office of the prime minister**

We implemented the MIS used to evaluate which micro project is eligible for receiving funding from OPM.

The platform is also used track distribution of funds allocated to a micro project.

I implemented the MIS used to perform the above operations.

1. **Law Firm Case Management System**

I was on a team of developers that implemented a law firm management system for Pahappa (U) LTD. The platform has the following modules; client profiling, case registration, case scheduling, file movement and notification updates to lawyers using the platform.

I implemented the following modules in the case management system;

* Client profiling – used to capture information about a client
* Case registration – used to capture all the required information about a case including all the relevant workflows a case goes through up to completion
* Case scheduling – used to manage when the next court case hearing will be held
* File management - used to attach documents, images or voice recording to a case
* SMS & E-Mail notifications - used to send alerts to lawyers in case there is an upcoming case hearing

**Other adhoc assignments that I have been involved in are as follows:**

**National Statistical Database for the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)**

I one of the developers that implemented an M&E system for MAAIF. The platform helps the government to track activities of its departments, sectors, and entities that are attached to the ministry. Each entity has a set of indicators against which progress is tracked and assessed.

I was also part of the team that implemented a mobile data collection application for the ministry’s analysis. I implemented a dynamic form generation engine used to create data collection tools used across the different sectors and entities with the ministry.

I implemented a mobile application used to dynamically create forms as specified by forms created within the main MIS.

The platform was developed in java frameworks such as; spring, MYSQL, Hibernate/JPA, JSF, HTML5, CSS, JS, android architectural components

**Mobility study MIS**

I was the lead developer that implemented an information management tool used to collect data about the movement and daily activities of teens in rural Guatemala. Data was collected using two approaches that involved manually inputting places visited at the end of the data, using the GPS to pick the current user location every 30 minutes.

I was also the lead developer on the team that implemented a mobile application used to collect data sent to the mobility MIS. I implemented the MIS, web services and the mobile application used to collect data.

**Artificial Intelligence and Data Science Lab Makerere University – (Adsurv)**

I was on the team of developers that implemented a web server for managing data collected from farmers. The web server manages farmer authentication and the Q&A module of the mobile application.

I implemented the Q&A module together with the APIs used to communicate with the mobile application.

I was also on a team of developers that implemented a mobile data application used to collect crop disease data from farmer’s gardens, real-time diagnosis of the health of a cassava crop, farmers also communicate with experts and other farmers, the mobile application enables experts to respond to questions asked by farmers.

The platform was developed in python frameworks such as; Django, MYSQL, SQLAlchemy, HTML5, CSS, JS, android architectural components