

## CONTACT

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- GitHub
- LinkedIn
- Portfolio

## EDUCATION

### Adama Science and Technology University

BSc in Computer Science & Engineering  
2019 - 2023

## TECHNICAL SKILLS

### Languages

Python, Java, JavaScript, TypeScript

### Backend Frameworks

Django REST Framework, Spring Boot,  
Node.js / Express.js

### Frontend

Next.js, HTML/CSS

### Databases

PostgreSQL, MySQL, SQLite

### DevOps & Tools

Docker, GitHub Actions CI/CD, Git

### Spring Ecosystem

Spring Security, Spring Data JPA,  
Scheduling, Microservices

## LANGUAGES

- English
- Amharic

# Frehiwot Gemechu

## SOFTWARE ENGINEER

### PROFILE SUMMARY

Backend Software Engineer with proven, hands-on experience architecting and maintaining enterprise-grade financial systems within the banking sector. Demonstrates proficiency in Django REST Framework, Spring Boot, Node.js, and Next.js, alongside a strong track record of high-impact solution delivery. Core competencies include microservices architecture, CI/CD pipelines, database design, and the development of secure, scalable APIs for business-critical applications.

### WORK EXPERIENCE

#### Backend Developer

March 2024 - Present

##### Cooperative Bank of Oromia

###### 1. Mudarabah Profit Distribution System

Django REST Next.js PostgreSQL Docker GitHub Actions

- ▶ Architected and developed a **full-stack Islamic banking profit distribution platform** end-to-end, replacing a manual process that took the finance team up to one month per cycle
- ▶ Engineered an automated calculation engine processing **13,500+ accounts within 2 hours**, achieving a 99.7% reduction in processing time
- ▶ Implemented configurable policy rules for minimum balance thresholds, distribution percentages across account tiers (fixed 3-month, 6-month, 1-year, and regular savings), and Mudarabah-compliant profit-sharing ratios
- ▶ Built complex financial computations including Weighted Average Rate (WAR), Profit Share, Mudarib/Rab al-Mal share allocation, Income Recognition Rate (IRR), and tax deductions with per-account audit trails
- ▶ Developed a responsive Next.js frontend with real-time search, per-account detail modals, and branch-level reporting for head office operations
- ▶ Set up Docker containerization and CI/CD pipelines using GitHub Actions for automated testing and deployment

###### 2. SouqPass Payment Gateway: Farmer Onboarding Module

Node.js Express.js REST API PostgreSQL

- ▶ Designed and built the farmer onboarding module for the SouqPass payment gateway, enabling smallholder farmers to register and access agricultural loan products
- ▶ Developed an **intelligent crop input recommendation engine** calculating optimal quantities of seeds, pesticides, and fertilizers based on agronomist data and farmer land size
- ▶ Designed a relational database schema with relationships between crop varieties, agricultural inputs, and quantity ratios, enabling scalable calculations via a clean API layer
- ▶ Implemented flexible ordering logic allowing farmers to adjust quantities below recommendations while enforcing upper-bound limits to prevent over-allocation of loan-backed inputs
- ▶ Integrated with an external credit scoring engine API to determine farmer loan eligibility and automate the approval workflow

###### 3. Farmer Loan Repayment Platform

Spring Boot Spring Security Spring Data JPA Microservices Scheduled Tasks

- ▶ Designed and implemented a **microservices-based loan repayment system** using Spring Boot to manage the full lifecycle of agricultural loan repayments including disbursement tracking, installment scheduling, and payment reconciliation
- ▶ Implemented **Spring Security** with role-based access control (RBAC) to protect sensitive financial endpoints and restrict access to authorized personnel
- ▶ Leveraged **Spring Data JPA** with Hibernate for ORM-based data access, designing entity relationships for loan accounts, repayment schedules, interest accrual records, and transaction histories
- ▶ Built automated **scheduled tasks (@Scheduled)** executing daily at midnight to calculate and accrue interest on outstanding balances, with timestamp-based checkpointing for accurate recalculation after system downtime
- ▶ Engineered a fault-tolerant interest calculation mechanism capturing the last-updated date per account, enabling recovery from the exact point and eliminating data loss during outages
- ▶ Implemented comprehensive structured logging across all microservices enabling rapid issue diagnosis through grep-friendly log patterns for end-to-end request tracing

Sep 2023 - Jan 2024

#### Backend Developer

##### EHPISA eLearning Platform

- ▶ Designed and implemented backend services and RESTful APIs using Django and Django REST Framework for a health education eLearning platform
- ▶ Collaborated with cross-functional teams to integrate backend services with the frontend; managed version control using Git and GitHub

2021 - 2022

#### Intern Web Developer

##### POESSA

- ▶ Developed a Material Management System using PHP, Bootstrap, and JavaScript
- ▶ Built a Store Management System using ASP.NET MVC; contributed to full-stack development and UI integration