

Matusala K. Gebrehiwot

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EDUCATION

Oulu university of Applied Science

Oulu, Finland

B.S. in Information Technology

Expected Graduation, Dec 2025

- **Concentrations:** Software Engineering
- **GPA:** 4.3/5.00
- **Related Coursework:** Web Development, Mobile Development, Object-Oriented Programming, Database Systems, System Architecture, Software Testing & Quality Assurance, Machine Learning

Hive Helsinki (42 Network)

Oulu, Finland

B.S. in Information Technology

Expected Graduation, Dec 2026

- **Concentrations:** Low-Level Programming & System Architecture
- **Related Coursework:** C Programming, Unix Systems, Algorithms, Memory Management, Process Management, Computer Architecture, Data Structures & Algorithms

EXPERIENCE

ZKHAUTO

Helsinki, Finland

Software Development Engineering Intern

July 2024 – Present

- **Designed, developed, and deployed** end-to-end car dealership web application from scratch using Next.js, Node.js/Express, and MongoDB, following **Software Development Life Cycle (SDLC)** and **Agile methodology**
- Engineered secure **RESTful API** with 15+ endpoints managing vehicle inventory, customer data, and dealership operations, implementing **data validation** using express validator to ensure data integrity
- Implemented comprehensive **authentication and authorization system** using JWT with bcrypt hashing/salting and **Google OAuth 2.0** via Passport.js, adhering to **secure coding practices**
- Integrated **Google Cloud Storage API** for high-quality vehicle image management, resolving complex bucket configuration challenges and optimizing storage architecture
- Designed and implemented **relational database schema** with normalized tables, establishing efficient data relationships and query optimization strategies
- Conducted **unit testing** using Jest framework and performed **system integration testing**, achieving robust **error handling** and **debugging** throughout development lifecycle
- Collaborated in **code reviews** with engineering team, providing and incorporating technical feedback to maintain code quality standards and **SOLID principles**
- Applied **problem determination** methodologies to troubleshoot and resolve application defects, performing **root cause analysis** on critical issues

ETA Solutions

Addis Ababa, Ethiopia

Software Development Engineering Intern

June 2024 – Aug 2024

- Developed user-facing interfaces for Point-of-Sale (POS) and cash register system using **React** focusing on **user experience (UX)** optimization for both customer and business workflows
- Collaborated with **business partners** to gather and define **detailed business requirements**, translating stakeholder needs into technical specifications
- Designed and implemented responsive UI components with **HTML/CSS** ensuring cross-browser compatibility and mobile responsiveness
- Participated in **Agile sprint planning** and daily standups, contributing to iterative development process and team collaboration
- Conducted usability testing and incorporated user feedback to enhance interface design, improving overall customer satisfaction

PROJECTS

Speedy-Delivery Project

Helsinki, Finland

Full Stack Web Delivery Service – Team Lead

Oct 2023 – Dec 2023

- Led 3-person development team through complete **Software Development Life Cycle (SDLC)**, managing **project planning**, task allocation, and timeline adherence for comprehensive delivery platform
- Architected and developed **four integrated system components**: Backend API (Node.js/Express), Consumer Web App (React), Driver App (React), and IoT Locker Simulator

- **Designed and implemented RESTful API** with 20+ endpoints handling user registration, authentication, parcel tracking, real-time status updates, and delivery management
- Built **real-time tracking system** using Socket.io for live parcel location updates and driver-consumer communication
- Engineered secure **authentication system** with JWT tokens (bcrypt hashing/salting) and **Google OAuth 2.0** integration using Passport.js
- Designed **MongoDB database schema** with collections for users, parcels, drivers, and lockers, implementing efficient data relationships and indexing strategies
- Deployed full application stack to Vercel, configuring environment variables and implementing CI/CD practices
- Conducted **Proof of Concept (POC)** for IoT locker integration, documenting technical findings and feasibility analysis
- Performed comprehensive **unit testing** and **system integration testing**, ensuring seamless communication between all four components

SuomiStay Oy

Helsinki, Finland

Mobile Booking System – Team Leader

Apr 2023 – Jun 2023

- Directed 3-person team in developing **React Native** mobile application for hotel booking system across Finland
- Developed complete booking workflow including search functionality, availability checking, reservation system, and booking confirmation
- Implemented **RESTful API integration** connecting mobile frontend with backend services for hotel data and reservation management
- Designed responsive mobile UI components following **React Native best practices**, ensuring smooth user experience across iOS and Android platforms
- Managed manual data population for hotel inventory, room types, pricing, and availability information
- Conducted **unit testing** and user acceptance testing (UAT) to ensure application reliability and performance
- Coordinated team tasks, facilitated technical discussions, and resolved integration challenges throughout 3-month development cycle.

Low-Level System Programming Projects (Hive Helsinki/42)

Helsinki, Finland

Mobile Booking System – Team Leader

Apr 2023 – Jun 2023

Minishell: Engineered Unix shell replica in **C**, implementing process management, pipe operations, redirections, environment variable handling, and signal processing, demonstrating deep understanding of **system architecture** and OS fundamentals

Push Swap: Developed optimized sorting algorithm in **C** with maximum efficiency constraints, showcasing advanced **data structures** and **algorithm design** skills with complexity analysis

Additional Projects: Completed libft (custom C library), ft_printf (printf implementation), and philosophers (multithreading/synchronization), emphasizing **memory management**, **debugging**, and low-level programming proficiency

Career Summary

Full-stack software engineering student with 6+ months of professional internship experience specializing in **designing, developing, and deploying** scalable web applications. Proficient in modern **JavaScript frameworks** (React, Next.js, Node.js), **relational and NoSQL databases**, and **secure authentication systems**. Strong foundation in **C/C++** through intensive system programming curriculum at Hive Helsinki (42 Network). Demonstrated ability to lead cross-functional teams, collaborate with business stakeholders, and deliver production-quality code following **SDLC best practices**. Experienced in **API design and integration**, **unit and system integration testing**, and **root cause analysis**. Eager to contribute technical skills and **problem-solving abilities** to TD Bank's innovative technology platforms.

Professional Attributes

Reliable & Safety-Centric: Attentive to producing robust and reliable software, with a focus on achieving functional safety in design and implementation.

Collaborative Team Player: Effective communicator with strong teamwork skills, dedicated to achieving project goals.

Creative Problem Solver: Passionate about tackling challenging problems and developing innovative, practical solutions.

SKILLS

Programming Languages: JavaScript, Java, C, C++, Python, SQL, HTML/CSS, TypeScript

Frameworks & Libraries: React, Next.js, Node.js, Express.js, Spring Boot, React Native, Jest

Databases & Storage: MongoDB, PostgreSQL, Microsoft SQL Server, Google Cloud Storage, Supabase

Development Tools: Git, Docker, Linux/Unix, Windows, npm, Vercel

Development Practices: Agile/SDLC, Unit Testing, System Integration Testing, RESTful API Design, Code Review, Debugging, Root Cause Analysis

Key Concept: Object-Oriented Programming (OOP), SOLID Principles, Data Structures & Algorithms, Authentication & Authorization (JWT, OAuth 2.0), Data Validation, API Integration