

# TEWODROS ABERE

Full-Stack Developer | IoT Enthusiast | Drone Hobbyist | Freelancer

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## EDUCATION

Bachelor's degree, Computer Science 06/2021 - 02/2025  
Debre Tabor University

## EXPERIENCE

IOT (Drone) and full-stack software development exposure in academic projects 06/2024 - 02/2025  
Debre Tabor University Debre Tabor, Ethiopia

AI chatbot development 05/2025 - Present  
Kezyas trading plc Remote

Junior Software Developer 07/2025 - Present  
360ground 22 mazoria, Addis Ababa

## PROJECTS

Drone Delivery Service (DDS) 06/2024 - 02/2025  
Debretabor University, Debre Tabor

**A Fullstack Web Application built using MERN stack with Redux state management.**

- **Client-Side Application:** Built with React and Tailwind CSS, allowing users to place delivery requests, view order history, track their package and more.
- **Admin & Pilot Dashboard:** Created separate interfaces for managing delivery zones, pilot assignments, and drone control integration with live video and GPS feedback.
- **Real-Time Features:** Integrated live camera feeds and drone GPS data using MQTT and Socket.io for seamless, low-latency updates.
- **Backend System:** Developed using Node.js and Express, with MongoDB as the database to store users, orders, and drone data.
- **Role-Based Access:** Admins manage the system; pilots handle drone operations; users track deliveries.
- **Tech Stack:** JavaScript, React, Node.js, Express, MongoDB, Redux, Tailwind CSS, Socket.io and MQTT.



## SUMMARY

Motivated and adaptable Computer Science graduate (**CGPA of 3.95/4.00**) with a passion for building solutions across full-stack development, IoT systems, and Drone Technology. **Junior Software Developer** currently employed at **360Ground** working on **ministry level** software projects with an additional remote internship at **Kezyas trading plc**, gaining hands-on experience with the development of a chatbot sharpening my **Ai customization** skills. Experienced in crafting real-world projects from concept to deployment, with a strong foundation in software engineering principles, embedded systems, AI and web technologies. A fast learner who values continuous improvement, innovation, and creative problem-solving. Open to exciting freelance opportunities and collaborations.

## KEY ACHIEVEMENTS

- 💎 **Designed and Built a Custom Quadcopter System**  
Developed a functional quadcopter with a custom controller architecture using ESP32, Arduino, GPS (Neo-6M), and NRF24L01+ modules with real-time data transmission.
- 💎 **Developed a Full-Stack MERN Drone Delivery Service (DDS) Platform with Real-Time IoT Integration**  
Built a scalable MERN stack application that allows clients to place delivery orders and provides real-time management dashboards for admins and pilots. Integrated live camera feeds and GPS location tracking from the quadcopter system using MQTT and Socket.io.

## PROJECTS

### Custom Quadcopter Development

06/2024 - 02/2025

Debre Tabor University, Debre Tabor

**An Arduino based Quadcopter designed and built for item delivery in short ranges.**

- **Designed and Assembled Entire Hardware System:** Built the drone using F450-compatible parts and integrated all components including ESCs, brushless motors, propellers, power distribution board, and LiPo battery.
- **Built from Scratch** using ESP32, Arduino Uno, and Arduino Nano to manage control logic, GPS data (Neo-6M), and wireless communication (NRF24L01+).
- **Implemented PID Stabilization** to ensure stable flight performance based on real-time joystick input.
- **Real-Time Data Communication:** Used NRF24L01+ modules for robust wireless control.
- **Programming & Protocols:** C/C++, Arduino IDE, PWM, I2C, UART, SoftwareSerial.
- **Hardware Components Used:** ESP32, Arduino Uno & Nano, Neo-6M GPS module, NRF24L01+ PA LNA transceivers, 30C ESCs, 1000KV brushless motors, propellers, 11.1V LiPo battery, power distribution board, joystick module, F450 frame, servo motors and potentiometers.

### Ai chatbot for kezyas trading

05/2025 - Present

Remote

I have been heavily participated on customizing AI for business purposes.

- Interned remotely to build an intelligent chatbot capable of multilingual (Amharic & English) conversation.
- Focused on integrating **LLM** models with a custom backend using **Node.js** and **REST APIs**.
- Sharpened AI prompt engineering and **RAG** skills while adapting chatbot responses to business-specific needs.
- Worked independently and reported progress in weekly standups.

## STRENGTHS



### Fast Learner

Quickly adapt to new technologies, frameworks, and hardware environments.



### Attention to Detail

From code quality to hardware assembly, I value precision and care.

## INTERESTS



Embedded Systems and robotics, Hardware Automation, AI customization and development, Software Development, Aeronautics, Space Science, Modern Physics, Religion and History.

## KEY ACHIEVEMENTS



### Graduated with High Grades (3.95 GPA)

Achieved one of the highest academic records in Computer Science at Debre Tabor University (Gafat Institute of Technology), demonstrating deep technical understanding and strong problem-solving abilities across multiple fields.

## SKILLS

### Programming Languages

C++, Python, Javascript, Java, HTML, CSS

### Frameworks, Tools and Databases

React, Node.js, Express, Tailwind CSS, Redux, MQTT, Socket.io, Arduino IDE, Postman, VS Code, MongoDB, MySQL, NEST.JS, RAG

### Hardware

Arduino, ESP32, NRF24L01+ PA LNA, Neo-6M GPS, ESP32 CAM module

### Other Technical Skills

Typing (100+ WPM), Drone (Quadcopter) development, Software Development, Git/Github, 3D Printing, API Integration