

# TEWODROS YIRGA

## Junior Software Developer

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## SUMMARY

Highly motivated and detail-oriented Computer Science Graduate and Full Stack Developer with a passion for building innovative software solutions. Ranked 1st in the Gafat Institute of Technology at Debre Tabor University with a CGPA of 3.98. Experienced in developing MERN stack applications and IoT systems. Proficient in Java, C++, JavaScript, React, Node.js, and Tailwind CSS, with hands-on experience in processing and embedded systems. Adept at problem-solving, teamwork, and writing clean, maintainable code. Seeking an opportunity to contribute technical expertise and creativity to cutting-edge software development projects.

## EXPERIENCE

07/2024 - 09/2024

Bahir Dar, Ethiopia

### Intern

#### Amhara Industry Parks Development Corporation (AIPDC)

Amhara Industry Parks Development Corporation (AIPDC) is a government entity responsible for managing and developing industrial parks in the Amhara region. The organization focuses on fostering investment, supporting manufacturing industries, and leveraging technology to optimize industrial park operations and economic growth.

- Diagnosed and resolved 10+ software and hardware issues, significantly improving system reliability and operational efficiency.
- Collaborated with cross-functional teams to enhance data management processes, streamlining operations across multiple departments.
- Documented and optimized technical processes, improving onboarding efficiency for future interns and reducing learning curves.

01/2024 - 02/2025

Debre Tabor, Ethiopia

### IoT Developer

#### Debre Tabor University

The IoT Center at Debre Tabor University is a research and development hub focused on exploring and implementing innovative Internet of Things (IoT) solutions. The center specializes in embedded systems, sensor networks, automation, and smart technology to create cutting-edge solutions for real-world challenges across various domains.

- Designed and developed a fully functional drone capable of flight and item delivery, demonstrating practical IoT applications.
- Engineered and contributed to multiple IoT projects, integrating sensor networks, automation, and embedded systems to develop smart, real-world solutions.
- Worked collaboratively with an 8-member team to research, develop, and deploy IoT-based innovations, enhancing connectivity and automation in various domains.

## EDUCATION

07/2021 - 02/2025

### Bachelor of Science (BSc) in Computer Science

#### Debre Tabor University – Gafat Institute of Technology

• **Graduated: Feb 2025 | CGPA: 3.98/4.00** (Ranked 1st in Gafat Institute of Technology)

## SKILLS

Programming Languages, Frameworks & Development Tools:

HTML	CSS	Tailwind CSS	React.js	Node.js	Express.js	Next.js	PHP	Java	C++	JavaScript
Python	Git & GitHub	Postman	MySQL	MongoDB	Windows	Linux	macOS	VS Code		

Other Technical Skills & Soft Skills:

Wireless Communication	Sensor Integration	Automation	API Development & Integration
Software Debugging & Optimization	Object-Oriented Programming (OOP)	Problem-Solving	Team Collaboration
Adaptability	Communication		

## KEY ACHIEVEMENTS



### Graduated with Honors:

Achieved academic excellence by graduating with honors from Debre Tabor University, demonstrating strong dedication and mastery of Computer Science principles.



### Ranked 1st in Gafat Institute of Technology:

Earned the highest academic ranking in the Gafat Institute of Technology with a CGPA of **3.98/4.00**, reflecting outstanding academic performance and commitment to excellence.



### Drone Development & IoT Innovation:

Designed and developed a fully functional autonomous drone capable of item delivery, showcasing expertise in IoT, embedded systems, and hardware-software integration.



### IoT Research & Development:

Contributed to IoT-based projects at Debre Tabor University IoT Center, developing smart automation solutions, sensor networks, and real-world IoT applications.

## PROJECTS

### Drone Delivery Service (DDS)

Date period Location

Developed a full-stack web application for a drone-based delivery service using the MERN stack (MongoDB, Express.js, React.js, Node.js) and Tailwind CSS for a responsive UI.

- Implemented real-time tracking, providing accurate and seamless monitoring of deliveries.
- Designed an intuitive user interface, enhancing the customer experience.
- The project received positive feedback for its innovative approach and was successfully demonstrated as a working prototype during the final-year presentation.

### Dream University Website

Date period Debre Tabor, Ethiopia

Created a full-stack university management system using HTML, CSS, JavaScript, PHP, and XAMPP, featuring course listings, faculty details, student registration, and university news.

- Enabled online student registration, course browsing, and university news updates.
- Developed a user-friendly and responsive web interface.

### Flight Controller Package

Date period Debre Tabor, Ethiopia

Designed and implemented a Flight Controller Package using Arduino IDE to control and calibrate drone components, ensuring smooth and stable flight operations.

- Developed key components, including hardware schematics, flight control algorithms, ESC calibration, and initialization code.
- Adapted and enhanced existing open-source flight controller logic to improve efficiency and performance.
- Successfully tested and deployed the system, ensuring precise control over drone motors and optimized flight stability.

### MPU6050 Movement Visualizer

Date period Debre Tabor, Ethiopia

Built a real-time motion visualization system using Arduino IDE and Processing to display position and acceleration data from the MPU6050 sensor.

- Developed an interactive 3D visualization to track quadcopter motion and orientation in real-time.
- Implemented serial communication between Arduino and Processing for accurate sensor data transmission.
- The system was reliable and served as an educational tool for understanding sensor-based motion tracking.

### Functional Drone Development

Date period Debre Tabor, Ethiopia

Designed and built a fully functional drone integrating ESP32, Arduino, MPU6050 sensors, and NRF24L01 communication modules.

- Developed a custom transmitter and receiver system for precise real-time drone control.
- Integrated GPS functionality for accurate positioning and navigation.
- Implemented a live camera feed, enhancing situational awareness during drone operation.
- Successfully assembled, tested, and fine-tuned the drone, achieving stable flight and seamless communication between all components.