

TSHILUKA TENDA

Computer Engineer

CONTACT

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EDUCATION

Jonathan Thifulufhelwi Secondary
2015- 2020

University of Kwazulu-Natal
BSC in Computer Engineering

2021-2025
Key Coursework: Software Development,
Embedded Systems, Data Structures and
Algorithms, Database Management,
Secure Computing.

skills

Hardware & Embedded Systems

- Microcontrollers: PIC (PIC16F690), ESP32, Arduino & Atmega32
- Circuit Design & Simulation: Proteus, Multisim
- Communication Protocols: UART, I2C, SPI, Iridium Satellite (RockBLOCK 9602)
- Sensor Integration: BME280, DS1307 RTC
- Electronics Prototyping and Troubleshooting

Software Development

- Programming Languages: C, C++, Python, Java
- Web Development: HTML, CSS, PHP, MySQL
- Blockchain: Smart Contracts (Solidity), MetaMask Integration
- Data Handling: Excel, SQL, Python (Pandas, NumPy)

Profile Summary

Versatile Computer Engineer with proven experience in both hardware and software project design and management. Skilled in developing embedded systems, designing electronic circuits, and building full-stack software solutions. Adept at leading projects from initial concept through to implementation and testing. Passionate about solving real-world problems through integrated engineering solutions that bridge hardware and software.

Work Experience

Cognifyz Technology 2025/03-2025/04
Data analyst intern

- Collected, cleaned, and analyzed datasets to extract actionable insights and support business decision-making.
- Used tools such as Microsoft Excel and Python (Pandas, NumPy, Matplotlib) to perform data manipulation, statistical analysis, and data visualization.
- Assisted in preparing dashboards and reports to present trends, patterns, and findings to the team.
- Gained hands-on experience in real-world data analysis workflows and improved proficiency in data-driven storytelling.
- Collaborated with the analytics team to solve business problems and improve operational efficiency using data insights.

University Of Kwazulu-Natal 2025-Present
Lab Demonstrator

- Guided second-year students through practical experiments and circuit design.
- Provided technical support and clarified theoretical concepts during labs.
- Ensured proper use of lab equipment and adherence to safety procedures.

Vacation Work 2024 - 2025
Satellite Communication

- Developed a satellite communication system using the RockBLOCK 9602 and ESP32 to transmit data via the Iridium network.
- Implemented serial communication and GPS data parsing for remote monitoring applications.
- Used PHP to receive and process satellite data through a specific IP address and port, enabling server-side data handling and storage

Internet Engineering & Protocols

- IP addressing (IPv4/IPv6)
- DHCP (Dynamic Host Configuration Protocol)
- DNS (Domain Name System)
- NAT (Network Address Translation)
- ARP (Address Resolution Protocol)
- ICMP (Internet Control Message Protocol)
- HTTP/HTTPS (Hypertext Transfer Protocol)
- FTP/SFTP (File Transfer Protocol)
- SMTP, POP3, IMAP (Email protocols)
- SNMP (Simple Network Management Protocol)

Tools & Platforms

- MPLAB, Wokwi Simulator, PulseView Logic Analyzer
- Git & GitHub
- Visual Studio Code

Project & Communication Skills

- Project Design and Management
- Technical Documentation
- Team Collaboration and Lab Demonstration
- Problem Solving & Innovation

Languages

- English: Fluent
- Tshivenda: Fluent
- Isizulu: Fluent
- Sotho: Intermediate

Personal Projects

Blockchain-Based Voting System

- Developed a secure voting platform using blockchain technology to ensure transparency and immutability.
- Implemented voter registration with Aadhar number and MetaMask wallet integration, including OTP verification.
- Designed smart contracts to handle vote casting and tallying on the Ethereum blockchain.

Smart Home Voice-Controlled Application

- Developed a satellite communication system using the RockBLOCK 9602 and ESP32 to transmit data via the Iridium network.
- Implemented serial communication and GPS data parsing for remote monitoring applications.
- Used PHP to receive and process satellite data through a specific IP address and port, enabling server-side data handling and storage

Certifications

Web Development Internship

- Organized by See Caller
- Certificate of Participation
- Participant: Tenda Tshiluka
- Team: tshilukatenda70
- Institution: University of KwaZulu-Natal

References

- Name: Professor Tom Walingo
- Position: Head of Department of Electrical, Electronics & Computer Engineering
- Institution/Company: University of KwaZulu-Natal
- Email: Walingo@ukzn.ac.za
- Phone: 0833388915
- Relationship: Academic Supervisor / Lecturer/Employer
- Name: Makhado Mashudu
- Position: CEO
- Institution/Company: Soulbent Projects
- Email: mashudumakhado@gmail.com
- Phone: 0789141806
- Relationship: Employer