Tafadzwa Takawira

Automation &
Mechatronics Engineer

CONTACT

Email: tafadzwatakawira33@gmail.com

Address: Tomsk, Russia
Portfolio: www.tafadzwatakawira.com

PROFILE

Graduate Automation Engineer | Available from September 2027

- Mechatronics and automation engineer (MSc 2027) with commissioning and R&D internship experience at an oilfield automation manufacturer.
- Skilled in PLC programming (Siemens TIA Portal), SCADA/HMI, Modbus integration, commissioning and troubleshooting of industrial control systems.
- Writes technical specifications, validates systems on test rigs and builds embedded controls on STM32 and ESP32.
- Founder of English Bridge (online school, ~8 teachers) and IO263 (Pvt) Ltd (industrial automation startup).
- English (native), Russian (C1), German (A1, studying). Motivated to build a career in mining automation.

EDUCATION

Tomsk State University | 2025-2027 (expected)

Master's Degree in Mechatronics and Robotics Engineering

- GPA: 5.0 / 5.0
- Thesis: Compact multi-parameter water quality analyzer based on the ESP32 microcontroller.
- VI Young Scientists Congress 2026 Participant
- 2026 World Youth Festival Participant

Tomsk State University | 2021-2025

Bachelor's Degree in Industrial Mechatronics and Robotics Engineering

- GPA: 4.5 / 5.0
- Thesis: Digital water quality monitoring system for greenhouses
- TSU Ambassador (pioneer cohort 2024/25)

CORE SKILLS

Automation & Robotics

PLC (Siemens TIA Portal, ISaGRAF, OpenPLC), SCADA/HMI (KEPServerEX, InTouch, FUXA), CoppeliaSim robot simulation

MCU & Embedded

STM32 (HAL, STM32CubeIDE), ESP32, Raspberry Pi, ATmega (AVR), C/C++, Python, I2C, UART, ADC, GSM, Modbus RTU/TCP, sensor integration

CORE SKILLS

Test & Validation

Test rigs and validation jigs, functional testing and system verification, sensor calibration (piecewise-linear), oscilloscope, multimeter, fault diagnosis and root cause analysis

CAD & Design

Reading CAD drawings and BOMs, KOMPAS-3D, AutoCAD, Altium Designer (PCB), Proteus, Ansys (MAPDL, FEA)

Prototyping & Workshop

Soldering and rework, 3D printing, CNC and basic machining, breadboarding and circuit assembly, wiring

Documentation

Functional and firmware specifications, BOMs, wiring guides, test reports, technical documentation

EXPERIENCE

R&D Engineer (Internship), Nefteavtomatika | June - Aug 2026

Oilfield measurement and automation equipment manufacturer, Kogalym, Russia

- Worked in the R&D department with technical documentation and electrical schematics for oilfield metering equipment.
- Prepared technical documentation and the internship engineering report.

Commissioning Engineer (Internship), Nefteavtomatika | June - Aug 2025

Oilfield measurement and automation equipment manufacturer, Kogalym, Russia

- Assisted in commissioning, verification and maintenance of industrial automation and measurement equipment.
- Supported hands-on troubleshooting, fault diagnosis and root cause analysis of automated control systems.
- Worked from electrical schematics and technical documentation on site.

PROJECTS

PLC Dewatering Pump Station Controller

Developing a lead/lag dewatering pump station controller in OpenPLC ladder logic with a FUXA HMI. Built a Python plant simulator and verified I/O over Modbus TCP, reflecting the pump control used in mine dewatering.

Automated Irrigation Controller (STM32)

Sensor-driven controller with soil moisture, TDS and pH sensing and GSM/Telegram alerts; wrote the functional specification, BOM and wiring guide.

Embedded & Robotics Coursework

STM32 HAL firmware, ESP32 and Raspberry Pi prototypes, Altium PCB design, Ansys MAPDL nonlinear simulation, CoppeliaSim mobile robot simulation (Lua), Siemens TIA Portal and SCADA labs.