ABDURAKHMON KUCHKOROV

+36 20 326 0742 | Email | LinkedIn | GitHub | Website

PROFESSIONAL OVERVIEW

Electrical engineering student bridging operational technology (Siemens, SCADA) with IT data pipelines (Python, Modbus TCP/IP) to optimize manufacturing processes. Reduced engineering workflows by 20% and maintained precise technical documentation (AutoCAD) for heavy power infrastructure. Integrated physical hardware with software (LabVIEW, Power BI) to support test development and validate automated systems.

TECHNICAL SKILLS

- **Quality & Documentation:** PFMEA, SOPs, Work Instructions (WI), Process Audits.
- **Infrastructure & Planning:** AutoCAD Electrical (CAD), Single Line Diagrams, Power Distribution, Coordination.
- **Industrial Automation:** Siemens S7-1200, SCADA/HMI, CODESYS, Modbus TCP/IP.
- **Software & IT:** MS Office, Excel Macros (VBA), Python, Matlab, Power BI, LabVIEW, C/C++, Git.
- **Languages:** English (Advanced), Russian (Conversational), German (Intermediate), Hungarian (Elementary).

WORK EXPERIENCE

Automation Engineer Trainee Jan 2026 - Feb 2026
Regional Electric Power Networks (HET.UZ) *Tashkent, UZ*

- Monitored real-time telemetry for 110kV/35kV distribution nodes and step-down transformers via SCADA, verifying RTU data transmission accuracy and load balancing.
- Validated Ladder Logic (LAD) for Siemens S7-1200 controllers, specifically optimizing "Timer On-Delay" (TON) blocks to filter transient voltage spikes in Automatic Transfer Switching (ATS) systems.
- Executed diagnostic testing on circuit breakers and protection relays, documenting fault clearance times (<20ms) using Megger and assisting in PFMEA for critical high-voltage nodes.
- Troubleshot signal attenuation (noise) issues in ASKUE smart metering networks, resolving communication failures in Power Line Communication (PLC) infrastructure.

Assistant Engineer (Internship) Jun 2024 - Aug 2024
HET.UZ JSC *Tashkent, UZ*

- Created and updated Single Line Diagrams (SLD) and technical manufacturing drawings using AutoCAD Electrical, directly supporting equipment upgrades and maintaining accurate production documentation.
- Analyzed operational and diagnostic data, developing automated Excel (VBA) tools that processed engineering tickets 20% faster and established clear Work Instructions (WI) and SOPs for internal diagnostic protocols.
- Collaborated with internal teams to verify diagnostic data, directly improving the accuracy of testing protocols.

PROJECTS & ACTIVITIES

Transformer Thermal Validation & Control Pipeline [Link] March 2026

- Built and tested a software-hardware demonstration unit simulating high-voltage transformers using CODESYS (IEC 61131-3) and Python, modeling core temperature variances during load cycles.
- Programmed automated cooling system logic and critical alarm thresholds, validating the control process against simulated thermal runaway conditions via Modbus TCP/IP.
- Engineered a data extraction pipeline logging real-time PLC telemetry to an automated Power BI dashboard, providing actionable metrics for manufacturing verification.

Real-Time HIL EV Traction Control System [Link] March 2026

- Designed a real-time HIL vehicle simulation using Python, implementing a discrete-time 1D longitudinal kinematic plant and Pacejka Magic Formula tire models synced at 50Hz via a custom Modbus TCP/IP server.
- Developed a closed-loop PI Traction Controller in CODESYS featuring an anti-hunting deadband and a 3 m/s open-loop launch override, successfully locking dynamic tire slip at an optimal 15% under maximum torque demand.
- Implemented industrial drivetrain protection and signal processing algorithms: first-order low-pass sensor filtering and strict mechanical torque slew-rate limiters (4000 Nm/s) to prevent transient shock loading and limit-cycle oscillations.

EDUCATION

University of Debrecen, Debrecen, HU Aug 2023 - Feb 2027
BSc in Electrical Engineering, GPA: 4.67/5.0
Stipendium Hungaricum Scholarship Awardee (merit-based Hungarian government scholarship)