

Rassul Zeinulla

Robotics AI and Automation Engineer

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Skills and Interests

Programming Languages: C++, Python, MATLAB, IEC 61131-3

Robotics: ROS1 Noetic, ROS2 Humble, Rviz2, MoveIt2, Computer Vision, Machine Learning, NVIDIA Isaac Sim

Automation & Control: Siemens TIA Portal, Schneider Control Expert, Autodesk Fusion 360, Unisim

Electronics and Hardware Skills: Raspberry Pi 4/5, ESP32, Nvidia Jetson, Intel RealSense D435i, Modicon M340/M241 PLCs, Simatic S7-1200/S7-300 PLCs, KUKA KRC4 compact, Kawasaki Astorino

Software & Tools: Git, GitHub, Linux

Experience

Robotics Intern (short term), *Arcobo* March 2026 – April 2026

- Deployed and operated a **Kawasaki industrial BA006L robot**
- Programmed and executed motion tasks on the **Astorino Kawasaki** platform, including trajectory following and pick-and-place operations.
- Utilized **SimBox HIL simulation** for safe testing, validation, and rapid iteration of robotic workflows.

Automation and Robotics Engineer Intern, *Hyundai Trans Kazakhstan* June 2025 – Aug 2025

- Programmed **PLC logic** (Siemens S7-300, TIA Portal) for conveyor automation (training stand)
- Developed **HMI interfaces** (XP Builder) and integrated industrial sensors
- Worked with **AGV intralogistics** and PLC communication systems

Robotics Laboratory Assistant, *Kazakh-British Technical University* Jan 2025 – Jan 2026

- Co-author of the laboratory **practice manual** for NVIDIA Isaac Sim
- Designed and implemented a **PID-based self-balancing control system** for a BLDC motor
- Fine-tuning **Computer Vision** model to 96% for Laboratory Projects

Machine Learning (Summer Program), *Yessenov Data Lab* June 2026 – July 2026

- Built **Image Extractor Agent**, an offline CLIP-based semantic image search system.
- Built a local **Russian-to-English translator** using MarianMT, Streamlit

Projects

Development of multirobot painting control system with realtime monitoring

- Accepted for The 20th IEEE International Conference on Control & Automation (**IEEE ICCA 2026**)
- Automated painting process: **PLC low-level** commands and **MATLAB for high-level** coordination for manipulators path planning, and OPC UA connection. Integration of SIMULINK for real-time operation.
- Tools Used: KUKA KR10 R1100-2, RoArm M2s, BLDC motor, MATLAB, Siemens SIMATIC S7-1500, WINCC (HMI), SIMULINK

Machine Learning and MATLAB with PLC

- Predict product quality in an **industrial mining process with ML** and connect to **PLC by OPC UA** communication, for HMI visualization
- Tools Used: MATLAB, Python, Machine Learning, Siemens SIMATIC S7-1200, HMI

Industrial Safety in Isaac Sim

- **Isaac Sim** simulation of safety process, integration movement of **kawasaki manipulator** and **YOLOv26** for human detection via ROS2

- Tools Used: Isaac Sim, Python, Computer Vision, ROS2 humble

Industrial Automation Internship Project at Hyundai Trans Kazakhstan

- **PLC-based** conveyor control, **HMI** development, and practical implementation of electrical and automation systems
- Tools Used: Siemens SIMATIC S7-300, Conveyor belt, LS Electric HMI, Proximity Sensors

Intelligent Human-Zone Tracking using Computer Vision

- A real-time **safety monitoring system** for **hazardous industrial zones** that detects people, verifies **safety-vest** compliance, and tracks dwell-time in danger areas
- Tools Used: Python, Computer Vision, YOLOv8

PID-Based Self-Balancing Control of a BLDC Motor

- A control project focused on implementing a **PID controller for a self-balancing BLDC motor system**, demonstrating feedback control, stability analysis, and **real-time motor regulation**.
- Tools Used: C++, Simulink, BLDC motors, microcontroller

Education

Kazakh-British Technical University, BS in Automation and Control

Sept 2022 – May 2026

- **American accreditation ABET**, **German accreditation ANABIN**
- **Coursework:** Foundations of Electrical Engineering, Theory of Linear and Non-linear Control Systems, Autonomous Mobile Robots, Industrial Robot Operations, Introduction to Machine Learning, Robotics: Estimation and Learning, Introduction to Computer Vision, Automation Components and Devices

Activities and Achievements

ASTP discipline: Won 2nd place for the best course project among 40+ teams from the entire 4th-year Automation and Control cohort at university

Mentor in Robo-Football Hackathon: Mentor for students and served as a judge in the Robo-Football Hackathon during ITFEST 2024 and ITFEST 2025

Open Day Robotics KBTU: Guided and advised prospective students on the Robotics and Automation program

EDUFEST KBTU: Presented KBTU student robotics projects and hands-on demonstrations

Portfolio

Feel free to check my specific [📁 Portfolio](#) [🔗](#) entry for more details!

Portfolio: <https://rassulz.github.io>