

# Gholibjon Qasobov

Automation and Robotics Engineer

✉ qasobovgholib@gmail.com | ☎ +7 (707) 350 61 34 | 🗂 Portfolio | [in](#) Gholibjon Qasobov | [Q](#) gholibqasobov

## Education

Kazakh-British Technical University, BS in Engineering and Technology

Sept 2022 – May 2026

- GPA: 3.33/4.0 ([Transcript ↗](#))

- **Coursework:** Foundations of Electrical Engineering, Theory of Linear and Non-linear Control Systems, Autonomous Mobile Robots, Industrial Robot Operations, Introduction to Machine Learning, PLC Programming, Automation Components and Devices, Robotics in Manufacturing

## Experience

**Robotics Teacher Assistant**, Kazakh-British Technical University

January 2024 - Present

- Developed an automated maintenance inspection system for multi-floor residential and industrial complexes, using a mobile-legged robot capable of navigating through elevators.
- Collaborated on designing and simulating a custom end-effector for a KUKA manipulator using RoboDK.
- Built an AprilTag-based pick-and-place system using a DoBot robotic arm.
- Contributing to the development of laboratory practice manuals and documentation for robotics laboratory work.

**Robotics Software Engineer**, Alma Valley - Borealis Laboratory

November 2024 – May 2025

- Recorded Raspberry Pi tutorials for Uni-X platform to support educational initiatives.
- Designed and implemented an environmentally focused drone for trash collection using Nvidia Jetson Orin NX and RealSense D435i 3d camera
- Developed a Unitree Go2 robot dog voice control in Kazakh language using an offline LLM and ROS2 Humble for local language support

## Publications

**Development of a Mobile Robot Platform For Smart Warehouse Management System** ([Publication ↗](#))

June 2024

Herald of Kazakh-British Technical University

This paper discusses the design and implementation of a mobile robot platform for enhancing smart warehouse management systems, focusing on navigation, automation, and scalability.

## Projects

**Unitree Go2 autonomous navigation and voice control in Kazakh Language**

- Developed a Quadruped Robot voice-control and autonomous navigation in ROS2 Humble with obstacle avoidance and front camera access.
- Tools Used: C++, Python, ROS2 Humble, Fusion-360

**KUKA PowerBank Assembly and Simulation in RoboDK**

- Collaborated on designing and simulating a custom end-effector for a KUKA manipulator using RoboDK.
- Tools Used: RoboDK, KUKA, Fusion-360

**DoBot Pick and Place Using AprilTag (QR code) Technology in ROS**

- Designed and implemented an AprilTag-based (QR code) pick-and-place system using a DoBot Magician manipulator.
- Tools Used: Python, ROS1 Noetic, Fusion-360

**Tic-Tac-Toe Playing Robot Against Human**

- Designed and implemented an interactive Tic-Tac-Toe-playing robot using the DoBot Magician manipulator, YOLOv8 object detection, and the minimax algorithm.
- Tools Used: Python, ROS2 Humble, Fusion-360

#### **Semi-Autonomous Water Drone for Trash Collection with Computer Vision**

- Collaborated in developing of a semi-autonomous water drone for trash collection
- Tools Used: Python, C++, YOLOv11, Nvidia Jetson Nx, RealSense d435i camera, Fusion-360

### **Activities and Achievements**

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**KazEnergy Eco-Shell Finalist:** Recognized for the innovative design and implementation of a Semi-Autonomous Water Drone for trash collection.

**Electrical Engineering Olympiad Finalist:** Demonstrated excellence in problem-solving and electrical engineering concepts at olympiad held by Satpayev University.

**Judge in Robo-Football competition:** Served as a judge in Robo-Football competition in ITFest 2024.

### **Skills and Interests**

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**Programming Languages:** C++, Python, MATLAB, JavaScript, IEC 61131-3 (ST, LD)

**Robotics:** ROS1 Noetic, ROS2 Humble, RoboDK, Nav2, Gazebo, Computer Vision, Machine Learning, Isaac Sim

**Electronics and Hardware Skills:** Raspberry Pi 4/5, ESP32, Nvidia Jetson, OpenCR, Modicon M340

**Languages:** Tajik/Persian (Native), Russian (Fluent), English (Fluent, IELTS 7.0/9.0), Kazakh (Elementary)

### **Portfolio**

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