

DIAS KABDUALIYEV

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SUMMARY

Engineering-focused final-year Information Systems student with hands-on experience in embedded systems, IoT prototyping, Linux-based devices, networking, and rapid hardware-software integration. Strongest in building practical prototypes using ESP32, Raspberry Pi, Arduino, sensors, and remote connectivity. Interested in robotics, physical AI, embedded systems, and real-world engineering tasks involving perception, control, and deployment.

EDUCATION

Bachelor in Information Systems

2021 – 2026

Suleyman Demirel University (SDU), Kazakhstan

TECHNICAL SKILLS

Embedded / Hardware	ESP32, Raspberry Pi, Arduino, soldering, 3D-printed enclosures
Software / OS	Linux, Ubuntu, Python, C/C++, Bash, Docker, Git
Networking / Infrastructure	Cisco basics, SSH, VPN, TCP/IP virtualization, Proxmox
Tools / Engineering	Fusion 360, 3D printing, hardware-software integration

EXPERIENCE

Hardware Engineer

Mar 2022 – May 2023

SDU Technopark

Kaskelen, Almaty Region, Kazakhstan

- Built IoT prototypes, including smart home automation, remote device control, and sensor-based monitoring systems.
- Worked with ESP32, Raspberry Pi, and Arduino in practical engineering and prototyping tasks.
- Operated CNC laser cutting equipment for fabrication of prototype parts and mechanical components.
- Designed and prepared models for rapid prototyping using 3D printing and laser cutting workflows.

Cisco Laboratory Assistant

Jan 2024 – Nov 2024

CYCNET Community

Kaskelen, Almaty Region, Kazakhstan

- Selected server hardware based on infrastructure and laboratory requirements.
- Installed and configured a KVM-based virtualization environment for internal infrastructure needs.
- Worked on hypervisor and infrastructure setup to support technical experiments and lab workloads.
- Deployed a PNETLab virtual environment for network simulations, experiments, and practical hands-on activities.

Co-Founder / Robotics Kit Development Engineer

2025-2026

Alashed LLC

Almaty, Kazakhstan

- Developed educational robotics and embedded systems kits based on Raspberry Pi Pico and Raspberry Pi 4/5.
- Managed the end-to-end development process, including hardware concept definition, component selection, prototyping, 3D modeling, fabrication, and technical documentation.
- Designed a robotic manipulator kit for hands-on learning in embedded systems, programming, and basic control principles.
- Contributed to the development of a quadruped robot kit, including mechanical design planning, part selection, prototyping workflow, and instructional structuring.

- Produced assembly instructions and technical materials to support deployment in educational and demonstration settings.

SELECTED PROJECTS

Unitree G1 Robotics Simulation and Sim-to-Real Workflow

2026

Worked with a Unitree robotics stack covering simulation, RL workflows, teleoperation, and deployment-related experimentation.

- Worked with Isaac Lab, MuJoCo, Unitree SDK2, and DDS-based communication for simulation and real-robot-compatible workflows.
- Explored locomotion and mimic training workflows for Unitree G1 robots, including simulation-based testing and policy execution pipelines.
- Worked with teleoperation and manipulation simulation tools for experiment setup, replay, and robotics data workflow preparation.
- Focused on practical integration of environments, tooling, and robotics software components for real-world experimentation.

Autonomous Visual Search Pipeline for Unitree G1

2026

Developed an autonomous search and navigation pipeline for a Unitree G1 humanoid robot in MuJoCo simulation.

- Designed a perception-and-control workflow for locating a target object, aligning to it, approaching it, and stopping at close range.
- Implemented object detection with OpenCV using HSV filtering, contour-based extraction, and image-based centering logic.
- Built a finite-state controller for search, alignment, approach, and stop behavior in a structured indoor scene.
- Integrated depth-based distance estimation and DDS communication with the Unitree locomotion control stack.
- Stack: C++, MuJoCo, OpenCV, unitree_sdk2, DDS, YAML, CMake.

Drone Simulation Stack

2025

Built a simulation stack for autonomous drone racing using ROS 2, Gazebo, PX4 Autopilot, MAVLink, and QGroundControl.

- Set up the environment for simulated flight control and code-driven experiments.
- Integrated PX4 Autopilot, MAVLink bridge, and QGroundControl into a working simulation workflow.
- Planned next steps include virtual gate detection with OpenCV and trajectory planning in simulation.

N1 Racing Formula Student Team

2023

Electric Powertrain Engineer for a Formula Student electric vehicle project.

- Worked on traction and high-voltage subsystem calculations, simulations, and component selection.
- Contributed to the design of a competition-ready electric race car.
- Part of the first team from Central Asia to officially participate in Formula Student.