Almaty, Kazakhstan
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muqantegi

Madiyar Mukanov

MSc Robotics graduate passionate about intelligent perception, real-time control and human-centric robots

Education

2023–2025 (exp.) **M.Sc. Robotics**, *Satbayev University*, Almaty
Thesis: Intelligent System for Automated Patient Monitoring via Thermal Imaging
Key coursework: Advanced Robotics Control, Machine Vision, Embedded Real-Time Systems

2017–2022 **B.Sc. Nuclear Physics**, *Al-Farabi Kazakh National University*, Almaty
Thesis: Static correlation properties of thermonuclear plasma (HNC method)

Technical Skills

Robotics & CV	ROS, OpenCV, Raspberry Pi
Programming	Python, C++, C#, MATLAB, Git
Embedded / HW	Raspberry Pi, ESP32-CAM, I^2C/SPI/UART
AI / Data	PyTorch, TensorFlow Lite, cycleGAN
CAD & Sim	COMSOL Multiphysics
Tools	Linux, SQLite, ModelSim, Quartus

Robotics Experience

2023–Present **Research Engineer, Robotics & Mechatronics Lab**, *Satbayev University*, Almaty
- Designed thermal-vision module (Pi Camera 2 + MLX90640 overlay) achieving ±1 °C accuracy; integrated face-tracking.
- Temperature records to SQLite

Mar 2025 **Research Intern**, *Shanghai Jiao Tong University*, Shanghai
- Participated in an academic visit, exploring 3D research labs and industrial robotics facilities.
- Attended TCT Asia 2025 gaining insights into emerging technologies and industry trends.

Summer 2019 **Research Trainee (Sakura Science)**, *Kyoto Institute of Technology*, Kyoto
- Participated in an international 4-member team project focused on smart mobility solutions.
- Designed and built a bicycle-mounted speedometer using embedded sensors and microcontrollers.

Dec 2020–Jan 2021 **Backend Developer (Contributor)**, *Kazakhstan Pavilion, EXPO Dubai 2021*, Dubai
Contributed to backend development of a mobile application featured at the Kazakhstan Pavilion.

Selected Projects

2024 **Thermal-Vision Telehealth Camera** – full-stack Python/Linux app with Matplotlib UI and DB logging.

2019 **Autonomous Bicycle Speedometer** – 1st place, International Competition in Electronics.

2021 **Plasma Simulation Toolkit** – Investigated radial distribution function (RDF) and static structure factor (SSF) for the BIM (Binary Ionic Mixture) model using the HNC (Hypernetted Chain) approximation; presented at Farabi Alemi conference.

Additional Research

2019–2021 **Undergraduate Research Assistant**, *Al-Farabi KazNU & Kazakh-British Technical University*, Almaty
Surface modification via PECVD and plasma etching; maintained vacuum lab equipment.

Awards & Leadership

2019 *Award for Excellence in Electronics*, Kyoto (1st place)
3rd place, Student Business Incubator Pitch, Almaty

2017–2022 Full Academic Scholarship, Al-Farabi KazNU

Languages

Kazakh (native) • Russian (native) • English (IELTS 7.0) • Arabic (beginner)