## Nazrin Gurbanova

Master's Student in Robotics

+1 (240) 422 9441 | nazrin@umd.edu | linkedin | github | website

## EDUCATION

## University of Maryland, (website) Aug. 2023 - May. 2025 College Park, MD, USA Master of Engineering, Robotics, GPA: 3.48 Robot Modelling, Control of Robotic systems, Planning for Autonomous Robots, Perception for Autonomous Robots, Fundamentals of AI and Deep Learning, Decision Making for Robotics, Software Development for Robotics Baku Higher Oil School, (website) Sept. 2018 - Jun. 2023 Bachelor of Science, Process Automation Engineering, GPA: 3.61 Baku, Azerbaijan Control Theory I and II, Microprocessors, Image Recognition, Data Structures, Digital Signal and Data Processing EXPERIENCE **Robotics Engineer Intern** June 2024 – Aug 2024 Void Robotics Marathon, FL, USA • Worked with Nav2 for autonomous navigation. Optimized Dockerfiles for seamless deployment of navigation. • Resolved ROS2 launch file errors, enhancing system stability. Fixed SSH-related memory issues, improving remote access. **Instrumentation and Automation Intern** Feb. 2023 – Aug. 2023 SOCAR Methanol Baku, Azerbaijan • Collaborated with engineers to calibrate and test industrial control systems, ensuring compliance with safety standards and seamless operation. Resolved more than five recurring technical issues in the old setup. Projects Finder Bots Multi-Robot Systems Oct. 2024 - Dec. 2024 Software Development for Robotics, GitHub Repository University of Maryland • Debugged and deployed a multi-robot system with 12 TurtleBots using ROS2 for warehouse item location. • Integrated SLAM and object detection tools (OpenCV, Aruco markers) for accurate robot navigation. **TrackAI: Human Detector and Tracker** Sep. 2024 - Oct. 2024 Software Development for Robotics, GitHub Repository University of Maryland • Implemented human detection and tracking using YOLOv8 & SORT/CSRT for collision avoidance and motion planning. • Documented system functionality, generated code coverage reports. Nov. 2023 - Dec. 2023 Pick and Place using a Mobile Base Manipulator Introduction to Robot Modelling, GitHub Repository University of Maryland • Integrated and tested the UR3e manipulator with a mobile base, ensuring smooth operation and joint control. • Performed real-time troubleshooting for LiDAR sensor integration and vacuum gripper operation. • Validated system performance through functional testing and hardware-software integration checks. **Computer Vision Projects** Feb. 2024 - May 2024 Perception for Autonomous Robots, GitHub Repository University of Maryland • Designed a video processing pipeline for paper corner detection and image stitching. • Conducted camera calibration, reprojection error analysis, and stereo vision system for depth estimation. Jan. 2022 – May. 2022 Teknofest Azerbaijan 2022, Team Leader 2nd place (Hexapod Model), 3rd place (Skywalker X8) Baku, Azerbaijan • Led a team of 6 to design and develop a Hexapod Model (Robotics category) and a Skywalker X8 drone (Sailplane). • Programmed the Arduino MEGA in interrupt mode to control MG995 servos for locomotion using inverse kinematics. • Used ESP32 for wireless data transmission (IR Flame Sensor, MQ-2, DHT22) and Raspberry Pi 4 for real-time video streaming. NASA Human Exploration Rover Challenge 2022 Sept. 2021 – Apr. 2022 Core team member, Sponsorship Manager Huntsville, AL, USA • Secured funding and resources by negotiating sponsorship deals with local companies and organizations. • Managed sponsor relationships, providing regular updates on team progress and competition milestones. • Collaborated with the hardware team to ensure all rover components met NASA Rover Challenge rules. Technical Skills **Programming:** C/C++, Python (Scripting, Multithreading), MATLAB, Object-Oriented Programming (OOP)

Robotics & Tools: ROS2, MoveIt, SLAM, Debugging Robotic Arms, Assembly and Testing of Robotic Solutions, Linux, Git, Docker, OpenCV, NumPy, TensorFlow, PyTorch, YOLOv5, SolidWorks, Gazebo, RViz, Nav2, QA Testing