

Saeed Bazargan

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Profile

Embedded systems and robotics engineer with extensive experience in real-time AI applications on microcontrollers, sensor integration, and mobile robot control. Proven research experience with publications in international RoboCup competitions. Seeking a PhD position in robotics and embedded AI to advance research in efficient AI-based control and perception systems.

Experience

Freelancer

(May 2025 – Present)

- Developed a ROS2-integrated two-wheeled rescue robot using STM32 and Micro-ROS.
- Implemented real-time MobileNetV2 inference on ESP32-CAM using TensorFlow Lite Micro.
- Built an Ethernet-to-RS485 gateway, reducing integration time of an industrial system by 90%.

Embedded Systems Engineer, TOSAN TECHNO

(Nov 2023 – May 2025)

- Integrated Quectel EC200 4G/2G modules to enhance communication reliability.
- Designed a secure Cortex-M bootloader using RSA-2048 for authenticated firmware updates.
- Improved data acquisition by 40% using a FreeRTOS-driven UART–SD logging pipeline.

Electronic Researcher, Mechatronics Research Lab (MRL)

(Aug 2016 – Apr 2024)

- Designed a USB2Dynamixel interface supporting both TTL and RS-485.
- Increased UART throughput by 25% via optimized FIFO buffering.
- Improved IMU (MPU9250/BNO055) data quality through SPI optimization and FreeRTOS tuning.

Electronics Student, ZSR Robotics Group

(Dec 2009 – Jul 2015)

- Designed an Atmega128-based motor controller improving rover motion stability.
- Implemented C#.NET-based object detection with 15% improved accuracy.
- Developed semi-autonomous rescue robots achieving 90% navigation autonomy.

Publications

MRL Team Extended Abstract for Humanoid Kid Size League of RoboCup 2023, Bordeaux, France (July 2023)

- Hamed Mahmudi, **Saeed Bazargan**, Arash Rahmani, Abolfazl Ashayeri, Fatemeh Rashnozadeh, Alireza Golchin, Ramtin Kosari, Sina Khoshzaban Khosroshahi, Mehdi Zeinali, and Maryam Shaban

MRL Champion Team Paper in Humanoid TeenSize League of RoboCup 2019, Sydney, Australia (July 2019)

- Meisam Teimouri, Hamed Mahmudi, Amir Gholami, Mohammad Hossein Delavarani, Soheil Khatibi, **Saeid Bazargan**, Milad Moradi, Bita Alaee, Arash Rahmani, Kazem Firouzmandi Bandpey, Peyman Fallahzadeh

Skills

Embedded AI & Robotics TensorFlow Lite / TFLM, Micro-ROS, FreeRTOS, ROS2, NAV2, RViz2, OpenCV, Linux

Programming C, C++, Python, C#.NET

Hardware & Interfaces STM32, AVR, ESP32, SPI, I2C, UART, RS485, RS232, GSM, Ethernet, GPS

Tools Altium Designer, STM32CubeIDE, CodeVision (AVR), Doxygen, FreeCAD, Git

Languages Persian (Native), English (Proficient)

Education

M.Sc. Electrical Engineering , QIAU, Iran	(2021–2025)
B.Sc. Electrical Engineering , QIAU, Iran	(2016–2021)

Honors

- **RoboCup** — (2017-2021)
 - 2nd Place, Humanoid League, Bordeaux, France
 - 1st Place, Humanoid League, Sydney, Australia
 - 2nd Place, Humanoid League, Montreal, Canada
 - 1st Place, Humanoid League, Bangkok, Thailand
- **IranOpen** — (2017-2023)
 - First Place, Humanoid League, Tehran, Iran, 2023
 - First Place, Humanoid League, Kish, Iran, 2018
 - Second Place, Humanoid League, Tehran, Iran, 2017