Saeed Bazargan

Linkedin

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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.

Experiences

Freelancer, Qazvin, Iran   (May 2025 – Present)
- Developed real-time object recognition on ESP32-CAM using TensorFlow Lite Micro and MobileNetV2.
- Optimized neural network performance for AI-based sine wave generation on embedded hardware.
- Reduced CPU load by 30% in multi-camera video capture using C#.NET and OpenCV with multi-threading.
- Designed an Ethernet-to-RS485 converter, reducing industrial system integration time by 90%.

Embedded Systems Engineer, TOSAN TECHNO, Qazvin, Iran   (November 2023 – May 2025)
- Integrated Quectel EC200 4G/2G modules for IoT applications, improving data transfer speed and reliability.
- Implemented a secure Cortex-M bootloader with RSA-2048 encryption, reducing boot time and enhancing system security.
- Increased data acquisition reliability by 40% through a FreeRTOS-based data logger using UART and SD card.

Electronic Researcher, Mechatronic Research Laboratory (MRL), Qazvin, Iran   (August 2016 – April 2024)
- Enhanced mobile-robot control efficiency by 45% using ESP32 and Micro-ROS integration.
- Designed a USB2Dynamixel board supporting TTL/RS-485 communication, reducing actuator integration time.
- Improved UART communication throughput by 25% with optimized FIFO-based buffering.
- Refined IMU performance (BNO055, MPU9250) over SPI with FreeRTOS for higher sensor accuracy.
- Led the electronics team, delivering three robotic systems on schedule and within budget.

Electronic Student, Zanjan Sama Robotic Group (ZSR), Zanjan, Iran   (December 2009 – July 2015)
- Developed an Atmega128-based mainboard for DC motor control, improving Mars rover maneuverability.
- Increased object recognition accuracy by 15% using C#.NET-based vision algorithms for the Festo Robot.
- Achieved 90% autonomy in rescue robots through obstacle avoidance and line-following navigation.

Publication

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 Delavaran, Soheil Khatibi, **Saeid Bazargan**, Milad Moradi, Bita Alaee, Arash Rahmani, Kazem Firouzmandi Bandpey, Peyman Fallahzadeh

Skills
- **Embedded AI and Robotics Frameworks**
- TensorFlow Lite, Micro-ROS, FreeRTOS, OpenCV, Robot Operating Systems (ROS2), RViz, Linux
- **Programming Languages**
- C/C++, C#.NET, Python
- **Hardware and Protocols**
- STM32 & AVR MCUs, ESP32, SPI, I2C, UART, RS485, RS232, GSM, Ethernet, GPS
- **Software and Design Tools**
- Altium Designer, STM32CubeIDE, FreeCAD, CodeVision (AVR), Doxygen, Git
- **Languages**
- Persian (Native), English (Proficient)
- **Soft Skills**
- Task Prioritization, Team Collaboration, Time Management, Problem Solving, Self-Learning

Education
- **MSc. Electrical Engineering**, Qazvin I. Azad University (QIAU), Iran (2021-2025)
- **BSc. Electrical Engineering**, Qazvin I. Azad University (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

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