

Saeed Bazargan

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Tehran, Iran

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Professional Summary

- Highly motivated Electronics and Embedded Systems Engineer with 8+ years of experience driving innovation in embedded firmware, PCB design, and robotics. Proficient with ARM Cortex-M, AVR, and ESP32 microcontrollers, possessing expertise in optimizing communication protocols and designing embedded systems for mobile and humanoid robots. As a proven leader, I successfully led a team to the RoboCup championship, earning multiple international titles. Interested in applying skills in robotics and contributing to advances in embedded hardware and embedded system engineering.

Work Experience

TOSAN TECHNO | Electronic Payment and Digital Banking

Qazvin, Iran

RESEARCH DEVELOPMENT ELECTRONIC ENGINEER / ELECTRONICS ENGINEER

November 2023 - Present

- Engineered a secure **Cortex-M** bootloader with **RSA-2048**, *improving boot time by 15% and enhancing security*.
- Developed a real-time **FreeRTOS** datalogger using **UART** and **SD card**, *increasing data capture reliability by 40%*.
- Applied **impedance matching** to enhance signal integrity in high-frequency circuits.

Freelancer

Qazvin, Iran

IoT RESEARCHER

July 2022 - June 2023

- Designed an **Ethernet to RS-485** protocol converter using **Wiznet W5500**.
- Achieved real-time multi-camera video capture with **C#.NET** and **OpenCV** using **multi-threading** for minimal CPU load.
- Enabled rapid IoT integration by specializing in Quectel **EC200** modules for **4G/2G** connectivity.

Research Experience

Mechatronic Research Laboratory (MRL)

Qazvin, Iran

ELECTRONIC RESEARCHER

August 2016 - April 2024

- Pioneered **ESP32** and **Micro-ROS** robot control.
- Designed **USB2Dynamixel** board for simultaneous **TTL/RS-485**, *decreasing actuator integration time by 90%*.
- Engineered **UART** with **FIFO** for 5 channels, *increasing data throughput by 25%*.
- Optimized **IMU sensors** such as BNO055, MPU9250 (**SPI**, **FreeRTOS**), *improving sensor accuracy by 15%*.
- Led electronics team, *completing 3 robotics projects on time and within budget*.

Zanjan Sama Robotic Group (ZSR)

Zanjan, Iran

ELECTRONIC RESEARCHER

November 2008 - February 2014

- Designed a Mars-rover mainboard with **Atmega128** microcontroller, enabling DC motor control for digging tasks.
- Developed **C#.NET** object detection for **Festo Robot**, *improving recognition accuracy by 15%*.
- Engineered rescue robot with obstacle/line navigation, *achieving 90% autonomous success*.

Skills

Programming and Libraries

C programming, C#.NET, Python, OpenCV, Micro-ROS, LaTeX

Software Development

System Design and Development, Debugging, Testing, Version Control, Programming Skills, Troubleshoot

Software Tools

Altium Designer, Circuit Maker, Keil (ARM), STM32CubeIDE, CodeVision (AVR), FreeRTOS, CMake, Doxygen, Git

Hardware and Protocols

ARM, AVR, ESP32, SPI, I2C, UART, RS485, RS232, GSM, Ethernet, GPS

Languages

Persian (Native), English (Proficient)

Soft Skills

Task Prioritization, Team Collaboration, Time Management, Problem Solving, Self-Learning

Honors

RoboCup

RoboCup Federation

ELECTRONIC RESEARCHER AND ROBOT-HANDLER

- Second Place, Humanoid Soccer Robot League, Robocup Competition 2021 | Bordeaux, France, July 2021
- First Place, Humanoid Soccer Robot League, Robocup Competition 2019 | Sydney, Australia, July 2019
- Second Place, Humanoid Soccer Robot League, Robocup Competition 2018 | Montreal, Canada, July 2018
- First Place, Humanoid Soccer Robot League, RoboCup Asia-Pacific 2017 | Bangkok, Thailand, October 2017

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ELECTRONIC RESEARCHER AND ROBOT-HANDLER

- First Place, Humanoid Soccer Robot League, International Robotic Competition 2023 | Tehran, Iran, April 2023
- First Place, Humanoid Soccer Robot League, International Robotic Competition 2018 | Kish, Iran, October 2018
- Second Place, Humanoid Soccer Robot League, International Robotic Competition 2018 | Tehran, Iran, April 2017

Education

Qazvin I. Azad University (QIAU)

Qazvin, Iran

MASTER DEGREE IN ELECTRICAL ENGINEERING

January 2021 - April 2025

- Department Of Electrical, Computer, and Biomedical Engineering

Qazvin I. Azad University (QIAU)

Qazvin, Iran

BACHELOR OF ENGINEERING IN ELECTRICAL ENGINEERING

December 2016 - January 2021

- Department Of Electrical, Computer, and Biomedical Engineering

Zanjan I. Azad University

Zanjan, Iran

ASSOCIATE DEGREE IN ELECTRICAL ENGINEERING

January 2013 - May 2015

- Department Of Electrical and Computer Engineering

Publication

MRL Team Extended Abstract for Humanoid Kid Size League of RoboCup 2023

Bordeaux, France

THE 26TH INTERNATIONAL ROBOCUP SYMPOSIUM.

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

SPRINGER

July 2019

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