

# Saeed Bazargan

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Qazvin, Iran

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## Professional Summary

- Electronics Engineer and Embedded Systems Engineer with a Master's degree in Digital Electronic Systems and 8+ years of experience in embedded firmware, PCB design, and robotics. Proficient in ARM Cortex-M and AVR microcontrollers, with expertise in optimizing communication protocols and designing embedded systems for mobile and humanoid robots. Successfully led a team that won the RoboCup championship, earning multiple international titles. I am looking for opportunities to innovate in robotics and embedded technologies.

## Work Experience

### TOSAN TECHNO | Electronic Payment and Digital Banking

Qazvin, Iran

RESEARCH DEVELOPMENT ELECTRONIC ENGINEER / ELECTRONICS ENGINEER

November 2023 - Present

- Developed a custom secure **bootloader** for **Cortex-M** using **RSA-2048** for firmware authentication.
- Implemented a **datalogger** with **FreeRTOS** using **UART**, **SD card**, and a **circular buffer**.
- Applied **impedance matching** to enhance signal integrity in high-frequency circuits.

### Freelancer

Qazvin, Iran

IoT RESEARCHER

July 2022 - June 2023

- Specialized in Quectel **EC200** modules for **4G/2G** applications.
- Programmed **AVR microcontrollers** for GSM circuits with **USART** communication.
- Designed an **Ethernet to RS-485** protocol converter using **Wiznet W5500**.
- Built a multi-camera video capture tool with **C#.NET** and **OpenCV**, leveraging **multi-threading** for efficiency.

## Research Experience

### Mechatronic Research Laboratory (MRL)

Qazvin, Iran

ELECTRONIC RESEARCHER

August 2016 - April 2024

- Developed a simple two-wheeled robot using **ESP32** and implemented **micro-ROS** for message-based motion control.
- Design and development a **USB2Dynamixel** board for simultaneous **TTL** and **RS-485** communication.
- Developed **UART communication** using **FIFO algorithms** to manage 5 independent channels.
- Configured **IMU sensors** (BNO055, MPU9250) with **SPI** on **FreeRTOS** for optimized performance.
- Led the electronics team, managing **planning**, task allocation, and system testing.

### 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 object detection for an Omni-Directional **Festo Mobile Robot** using **C#.NET**.
- Built a rescue robot with obstacle navigation and line-following capabilities.

## 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

## IranOpen

IRNC

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

## Publication

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### 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

## Education

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### Qazvin I. Azad University (QIAU)

Qazvin, Iran

BACHELOR OF ENGINEERING IN ELECTRICAL ENGINEERING

December 2016 - January 2021

- Department Of Electrical, Computer, and Biomedical Engineering
- CGPA: 14.30/20 (3.06/4.0)

### Zanjan I. Azad University

Zanjan, Iran

ASSOCIATE DEGREE IN ELECTRICAL ENGINEERING

January 2013 - May 2015

- Department Of Electrical and Computer Engineering
- CGPA: 16.76/20 (3.55/4.0)