

# Saeed Bazargan

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July 12, 1994

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## Research Experience

### Freelancer

Toronto, Canada

April 2024 - Present

### TOSAN TECHNO | Electronic payment and digital banking

Qazvin, Iran

RESEARCH DEVELOPMENT ELECTRONIC ENGINEER

October 2023 - April 2024

- Developed a custom **bootloader** for secure device startup using the MH1902 microcontroller based on **ARM Cortex-M3**. To enhance security, the encryption key was dynamically incorporated into the data, and the encryption process utilized the robust **SHA-256** algorithm.
- Familiar with designing high-frequency **PCBs**, specializing in intricate layouts for complex 8 to 10-layer designs within the 1-3 GHz frequency range.
- Adept at **impedance matching** techniques to ensure optimal signal integrity and performance in high-frequency circuitry.

### FreeLancer

Qazvin, Iran

IoT RESEARCHER

July 2022 - June 2023

- Proficient in Advanced Encryption Standard (**AES-128**) and adept at its practical implementation for **secure data** handling.
- Acquainted with **Quectel's EC200** modules, demonstrating expertise in both **4G and 2G** technologies.
- Programmed AVR microcontroller in C for **GSM** circuit, employing **USART** for data communication and smart home relay control.
- Recognize the floor of a roller where a product is located using a button method and **Ethernet** transmission.
- Design an **Ethernet to RS-485** protocol converter, which was done by Wiznet W5500.
- Drive a DC motor made by a Turkish company called Kormas using a high-power relay.
- Created a custom C#.NET and **OpenCV** application for simultaneous video capture from multiple cameras. Employed multi-threading for efficient data processing and smooth playback.

### Mechatronic Research Laboratory (MRL) - Humanoid Soccer Robot Team

Qazvin, Iran

ELECTRONIC RESEARCHER

August 2016 - December 2023

- Design a modified version of the USB2Dynamixel (USB2DXL) board, which is the interface between the Dynamixel actuators and the controller. This board is designed to communicate with both **TTL and RS-485** Dynamixel series at the same time.
- Developed communication with Dynamixel actuators using the **UART** interface and queue algorithms in the humanoid robot's platform, effectively dividing communication into 5 independent lanes.
- Configured BNO055 and MPU9250 IMU sensors with **SPI** interface on **FreeRTOS**, utilizing the queue method for efficient data processing. Optimized system performance and reliability using STM32F405 microcontroller and HAL, transferring data via **USB to UART** converter.
- Led the electronic section of a robotics team, directing project planning, task management, and new member recruitment. Conducted rigorous testing and debugging to ensure the reliability of electronic systems.

### Zanjan Sama Robotic Group (ZSR)

Zanjan, Iran

ELECTRONIC RESEARCHER

November 2008 - February 2014

- Programmed and designed the mainboard for the Mars-rover robot, employing an **Atmega128** microcontroller. Effectively controlled high-power DC Motors for tasks including digging.
- Executed object detection and manipulation on an Omni-Directional **Festo Mobile robot** using C#.NET. Proficient in recognizing shapes and ensuring precise object placement.
- Designed and programmed rescue robot board, incorporating obstacle navigation capabilities in a follow-line robot framework.

## Skills

### Programming and Libraries

C Programming Language, Python, C#.NET, LaTeX, UML, OpenCV, Python Libraries, MATLAB

### Software

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

### Hardware

ARM, AVR, GSM, ZigBee, GPS, WiFi, SPI, I2C, CAN, UART, RS485, RS232

### Languages

Persian (Mother Tongue), English (Foreign Language)

### Soft Skills

Easily Get Into Teams, Time Management, Problem Solving, Self-learning.

## Honors

### First place in Humanoid Soccer Robot League, International Robotic Competition 2023

THE 17TH IRANOPEN ROBOCUP.

Tehran, Iran

April 2023

### Second place in Humanoid Soccer Robot League, Robocup Competition 2021

ROBOCUP FEDERATION

Bordeaux, France

July 2021

### First place in Humanoid Soccer Robot League, Robocup Competition 2019

ROBOCUP FEDERATION

Sydney, Australia

July 2019

### First place in Humanoid Soccer Robot League, International Robotic Competition 2018

THE 15TH IRANOPEN ROBOCUP.

Kish, Iran

October 2018

### Second place in Humanoid Soccer Robot League, Robocup Competition 2018

ROBOCUP FEDERATION

Montreal, Canada

July 2018

### First place in Humanoid Soccer Robot League, RoboCup Asia-Pacific 2017

ROBOCUP FEDERATION

Bangkok, Thailand

October 2017

### Third place in Manually Quadcopter League, International Robotic Competition 2013

AUTCUP ROBOCUP

Tehran, Iran

November 2013

## Publication

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

THE 26TH INTERNATIONAL ROBOCUP SYMPOSIUM.

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

SPRINGER

Sydney, Australia

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

### Qazvin I. Azad University (QIAU)

MASTER OF SCIENCE IN DIGITAL ELECTRONICS

Qazvin, Iran

January 2021 - June 2024

- Department Of Electrical, Computer, and Biomedical Engineering

### Qazvin I. Azad University (QIAU)

BACHELOR OF ENGINEERING IN ELECTRICAL ENGINEERING

Qazvin, Iran

December 2016 - January 2021

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

### Zanjan I. Azad University

ASSOCIATE DEGREE IN ELECTRICAL ENGINEERING

Zanjan, Iran

January 2013 - May 2015

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