

Mohammad Mahdi Shirazi

EMBEDDED ENGINEER · SOFTWARE PROGRAMMING EXPERT

Leeghwaterstraat 240, 2628LW Delft, Netherlands

☎ +31 (0)6 33 50 25 95 | ✉ mhmdshirazi@gmail.com | 🏠 mhmdshirazi.ir | 📧 mhmdshirazi | 🌐 mhmdshirazi | 📧 mhmdshirazi

Profile

- A specialist in the field of **Embedded Systems Design** and **Programming** with more than **6 years** of work experience
- Comprehensive knowledge of different programming languages such as **C/C++** and **Python**
- In-depth knowledge of different micro-controllers such as **ARM, PIC, and AVR**, and communication protocols for instance, **I2C, USART, CAN, USB, Ethernet, 1-Wire**

Experience

To view my **Portfolio** [Click Here.](#)

- Senior Electronics Engineer

Delft, Netherlands

COGNITIVE ROBOTICS DEPARTMENT, DELFT UNIVERSITY OF TECHNOLOGY

2019–Present

• Duties:

- Developing **embedded solutions** for robotic systems
- Supervising PhD students' practical projects

- Embedded Software Engineer

Delft, Netherlands

LUNAR ZEBRO PROJECT, DELFT UNIVERSITY OF TECHNOLOGY

2019–Present

- **Active Project:** Developing a real-time program for on-board micro-controller of a **moon rover's** motherboard
 - Embedded core: **MSP432 (Arm Cortex m4), C, TI-RTOS, Code Composer Studio**
 - Peripherals and Protocols: **I2C, USART (RS485), SPI**
- **Finished Project:** Designed a controlling software for a vacuum temperature compartment
 - Embedded core: **Raspberry Pi 4, Python, Embedded Linux**
 - Peripherals and Protocols: **I2C, SPI, PWM**

- Embedded Software Engineer

Doha, Qatar

FINE POSTURE STARTUP

2018–2019

- **Project:** Developed **embedded software** for a headphone that can measure back-posture
 - Embedded core: **BGM13P SoC, C, Simplicity studio**
 - Peripherals and Protocols: **BLE, I2C, ADC**

- Full Stack Embedded Developer (Freelance)

Tehran, Iran

MAZAND PLAST NOOR INDUSTRIAL GROUP

2018–2019

- **Project:** Developed an **embedded solution** for a **Snowa™** washing machine
 - Embedded core: **PIC16F15386, C, Custom interrupt-based RTOS, Mplab X IDE**
 - Peripherals and Protocols: **ZCD, ADC, UART, PWM**

- Full Stack Embedded Developer (Freelance)

Tehran, Iran

SUPPLYING AUTOMOTIVE PARTS Co. (SAPCO)

2017–2018

- **Project:** Developed an **embedded solution** for 'Precise Car Keys Quality Control Unit'
 - PCB Design: **Altium Designer**
 - Embedded Core: **dsPIC, C, Custom interrupt-based real-time system, Mplab X IDE**
 - Peripherals and Protocols: **I2C, Modbus, USART, CAN, Ethernet, ADC, PWM, DMA**

- Senior Embedded Engineer

Tehran, Iran

FAPAN Co. LTD.

2016 – 2018

• Accomplishments:

- Developed a **RTOS-based** SoC on FPGA using Atlium TSK3000A soft micro-controller
- Developed **3** successful versions of ultra-sonic Homogenizers with FPGA core
- Developed **8** different embedded sensor modules, including Ultra-sonic range finder, and laser ToF range finder

- R&D Engineer

Tehran, Iran

ISUN LIGHTING Co.

2014 – 2016

• Accomplishments:

- Designed and Manufactured 2 series of smart LED panels (**DALI, Zigbee, STM32 ARM**)

- Head of Robotics Group

Tehran, Iran

PARSIAN ROBOTICS GROUP

2014 – 2018

• Accomplishments:

- Developed a novel FPGA-based architecture for omni-directional mobile robots
- Developed a SoC with Altium TSK3000 RISK micro-controller for Xilinx Spartan 6 FPGA series
- Developed an interrupt-based RTOS with task scheduler for Atmel Xmega micro-controllers
- Achieved more than 10 trophies in robotics competitions in 6 different countries

Skills

Mathematics Proficient in **Mathematics**, including calculus, linear algebra, and discrete mathematics

- Expert in **Reading, Modifying, and Refactoring** Large code-bases
- **Languages** (Years of experience): **C/C++** (12 years), **OOP** (12 years), **VHDL/Verilog** (8 Years), **Matlab** (7 years), **Python** (5 years), **UML** (2 Years), **TeX, Rust, Swift, Assembly** (2 Year), **HTML, CSS, QML, PHP** (<1 Year)
- **Embedded cores** (Years of experience): **AVR** (12 Years), **FPGA/CPLD** (8 Years), **SOC(Xilinx Zynq), ARM, PIC** (6 Years), **PLC** (1 Year)
- **Interface and Protocols: I2C, SPI, CAN, Ethernet, Modbus, SDHC, USART and One-Wire**
- **Radio Communication: Zigbee, Bluetooth, Wifi, BLE and NRF**
- **Frameworks** (Years of experience): **Qt** (6 Years), **ROS** (2 Years), **Pytorch, Open CV** (1 Year), **Open CL** (<1 Year)
- Solid background of **Electronics** (Digital and Analog)
- Ability to read complex **PCB** and **Electrical Schematics**
- Expert in Design Electronic (digital and analog) boards, both **Schematic** and **PCB** using **Altium Designer**

Software Version Control In-depth knowledge of **Git** and **Subversion**

Operating Systems Linux (Ubuntu and Debian), Mac, Windows

- Production and DevOps**
- Extensive knowledge of Application production and **Agile**, especially **Scrum**
 - Knowledge of User Experience and User Centered Design

Education

Master of Science in Electrical Engineering (Mechatronics)

Tehran, Iran

AMIRKABIR UNIVERSITY OF TECHNOLOGY

2015–2018

- **Thesis Title:** Design and construction of electronic parts and trajectory control of an Omni-directional robot in presence of moving obstacles

Bachelor of Science in Electrical Engineering (Digital Electronics and Embedded Systems)

Tehran, Iran

AMIRKABIR UNIVERSITY OF TECHNOLOGY

2011–2015

- **Thesis Title:** Design and construction of a prototype Laser rangefinder with range of 50 meters

Diploma in Mathematics and Physics

Tehran, Iran

ALLAME HELLI HIGHSCHOOL

2007–2011

- Affiliated with the National Organization for the Development of Exceptional Talents (NODET)

Honors & Awards

- | | | |
|------|---|------------------------|
| 2019 | PhD Scholarship in CompSOC project, Prof. Kees Goossens, Eindhoven University of Technology | Eindhoven, Netherlands |
| 2019 | Best Junior Team Award as the Mentor of “RTF5-1 Robotics Team” in Simurosot league, Iranian Firacup | Tehran, Iran |
| 2018 | Ranked 14th out of 3224 teams, ZhejiangLab Global AI- Zero-shot Learning Picture Recognition | China |
| 2018 | Ranked 3rd with “MCS Robotics Team” in Simurosot league, FIRA RoboWorld Cup & Congress | Taiwan |
| 2017 | Ranked 4th with “Parsian Robotics Group” in Small Size Soccer League, Robocup Competitions | Nagoya, Japan |
| 2017 | Ranked 1st with “Parsian Robotics Group” in Small Size Soccer Technical Challenge, Robocup Iran Open | Tehran, Iran |
| 2016 | Promoted to final best eight teams with “Parsian” in SSL League, Robocup Competitions | Leipzig, Germany |
| 2015 | Exempted from university entrance exam and offered M.Sc. program in Electrical Engineering, Amirkabir University of Technology | Tehran, Iran |
| 2015 | Promoted to final best eight teams with “Parsian” in SSL League, Robocup Competitions | Hefei, China |
| 2014 | Ranked 1st with “Parsian Robotics Group” in @Factory league, Robotica Competitions | Espinho, Portugal |
| 2014 | Ranked 1st as the mentor of “Emja Robotics Team” in junior soccer open weight, Robocup Competitions | Joao Pessoa, Brazil |
| 2013 | Ranked 3rd with “Parsian Robotics Group” in Small Size Soccer league, AUTCUP Competitions | Tehran, Iran |
| 2011 | Exempted from university entrance exam and offered B.Sc. program in Electrical Engineering, Amirkabir University of Technology | Tehran, Iran |
| 2009 | Ranked 1st with “Allame Helli Robotics” in Junior Soccer Robotics league, Robocup Competitions | Graz, Austria |
| 2009 | Ranked 1st with “Allame Helli Robotics” in Junior Soccer league, Kharazmi Youth Robotics Competition | Tehran, Iran |