Mohammad Vatandoost Silab **Embedded** **Software Engineer**

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Date of birth: 19/08/1995

**Summary**

I have more than 6 years experience in Embedded, Desktop and Back-End Software development for small and medium Enterprises. I participate in all phases of the software development life cycle. I mainly work with C/C++, Qt framework, Golang and Python. The most of my working experience is in a team, I enjoy to help my team to solve problems.

**Experience**

**Software Engineer** [Fanap-infra.ir](https://fanap-infra.ir/)

Aug 2020 – present

Fannap-infra is Developing multiple Software projects. I am working in Behnama projects team. Behnama is a video surveillance software.

Behnama is built on microservice architecture, it contains RTSP client, recording, web-app, webrtc, API, analyzer, Kafka, ONVIF, PostgressDB and influxDB services.

* Writing a WebRTC player backend for playing live and records. It receives commands and sends records list and metadata by WebRTC data channel - Go
* Using GRPC for communication between microservices – Go, C++ and Python
* Receiving RTSP(IP Camera stream) by ffmpeg library – C/C++
* Using Kafka for streaming media and Metadata packets – Go, C++ and Python
* Creating recording file structure for minimizing head movement of HDD – Go
* Adding motion detection (by OpenCV) to analyzer service – Python
* Dockerise Stream and RTSP services

### Software Engineer [3ddreams.ir](https://3ddreams.ir/)

### Dec 2019 – Jul 2020 (8 months)

### 3DDreams build the industry 3D printer Devices. I developed server and clinet software for the device.The server software is running in a raspberry pi inside the device and the client software is a cross platform app that run in a desktop computer.

* Adding unit test with gTest to client and server project – C++
* Implementing UI of Client project by Qml
* Socket programming and using protobuf for messages structure – C++
* Using Serial Port for Communication with actuator – C++.

### Embedded Software Engineer [raiwan.ir](http://raiwan.ir/)

### Nov 2017 – OCT 2019 (2 years)

### Raiwan works on designing and building IoT and industrial manufacturing and labratory devices.

### I developed softwars for industrial devices. I designed and implemented Algorithms for different use cases, such as: Oil industry, IoT, Polymer industry and civil industry.

* Receiving data from Socket at rate 96 MBit, then simultaneously Decode, Decrypt(Cryptopp library) and Mux(ffmpeg library) H.264 and audio(PCM to AAC) frames – C/C++
* Writing a Linux USB Driver - C
* Working with RS485 mode bus protocol in industrial devices – C++
* Developing Android app that connect to modules by BLE and OTG, It receives files and send user commands - Java

### FreeLancer

Feb 2016 – Sep 2017 (1 year and 8 months)

I worked with multiple start ups to build theirs MVP products.

* Receiving sensors data in real time from serial port and plot them by QtChart – C++
* Preprocessing data by FFT and filters like Butterworth and averaging data chunk.
* Converting matlab code of constumers to C++ code.
* Using UART and I2C protocol in Orange pi and Raspberry pi.
* Designing relational data base.
* Crawling websites with Selenium - Java

**Student Researcher** KNTU Aras robotic Lab

Nov 2014 – Jan 2016 (1 year and 3 months)

KNTU Aras robotic Lab research on UGV and MAV. I designed and programmed robot's Embedded system.

* ARM Microcontroller(Stm32 series) and AVR programming (Used I2C, UART, SPI, PWM, USB and ADC peripherals).
* PCB Design of Embedded systems.
* Working with Different sensors and Electronics modules.

**Education**

* University of Tehran, MS, Computer Software Engineering,  (2019 - 2021) (GPA: 3.5/4)
* K. N. Toosi University of Technology , BS, Electronic Engineering, (2013 - 2018) (GPA: 3.3/4)

## **AWARDS**

## Aut cup 2016 Our Team achieved the second place in Rescue robots competition.

## IRAN Open 2015 robotic competition Our Team achieved the first place in diminer robots competition.

## Chess Competition I achieved the first place in chess competition between high schools students

### Teaching

Embedded software development course in Robotic lab of K. N. Toosi University of Technology

### Skills

### C/C++ - Qt - Golang - Unit Testing – Message Queue(Kafka) – GRPC - Cmake - Protobuf - Linux Driver development –Embedded Systems – Python - DataBase Design –Java - Socket Programming – Onvif - MySQL, Sqlite, PostgresSQL and influxdb – PID – Docker -RS485, RS232, I2C and UART Protocols - STM32(ARM Cortex-M) - Git

## **Language**

* Persian (Native)
* English (Full professional proficiency)
* Azerbaijani (Full professional proficiency)

### Interests

* Soccer
* Tech Articles
* Movies