

# Hamid Najafi

## Embedded System Specialist

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### ABOUT ME

Embedded System Specialist with established experience in the Industrial IoT and Healthcare Industry.

This CV is a summary of +5 years of my practical experience developing embedded software, hardware, and Internet of Things products and solutions for academic and business use.

I enjoy working in collaborative settings where ideas are discussed and personal experiences are shared. In my senior role, I have worked as a team leader, cooperating with others to achieve optimal results.

I was involved in the production of a variety of products, and I hope they expand swiftly and perhaps improve our quality of life.

My LinkedIn and online portfolio has further information about me. ([Click Here](#))

### WORK EXPERIENCE

#### Senior Embedded System Developer

Feb 2021 - Present

##### C1Tech Group

- Design, Development, and Implementation of an AI-Based Control Panel for Operating Theatres in Hospitals and Cleanrooms with Modular Technology
- Ceiling & Surgical Lights, AHU with Laminar Air Flow, Voice Command, VoIP, Music, Paging, Room Temp/Humidity/Pressure, HEPA Filter, Isolated Power Panel Monitoring, etc.
- Project manager as well as developer in designing of operating room electrical and embedded systems.
- Provide assistance to the development of hardware team and recruiting six new specialists.
- Overall, 84 operating rooms and 41 sections of cleanrooms are automated in various locations across the country.

#### Embedded System Consultant

Jul 2019 - Present

##### FUMP-ICT

- Consultancy and development in the design of embedded systems in Green Campus Project of Ferdowsi University of Mashhad on a part-time contract.
- Cooperating with the university's information technology center for system requirements, conception and design.
- Equipping Internet of Things (IoT) devices, based on the LoRaWAN network across the campus.
- Power & Water Metering, 2D & 3D Online GIS (Indoor Positioning), Plants Irrigation, Transportation Monitoring (Buses, Cars, and Bikes).

#### Linux System Administrator

Jan 2020 - Jul 2020

##### Ministry of Education - Mashhad

- Online Learning Management System (LMS) - Virtual Classroom Platform
- Deploy applications and services developed by the programming team to the private cloud (Docker)
- Maintain and develop CI/CD pipelines (GitLab) and automated processes.
- Development of a monitoring system, utilizing Prometheus and Grafana
- Served as the Product Owner for a team of 5 developers, overseeing project planning, execution, and delivery.

#### Embedded System Developer

Jan 2016 - Dec 2019

##### Ferdowsi University of Mashhad

- Incorporating student initiatives and various projects in university labs as part-time job.
- Described in EDUCATIONAL EXPERIENCE section (Page 2).

#### ICT Network Technician

Jun 2018 - Aug 2018

##### HiWeb (Vodafone Partner in Iran)

- Internship of Bachelor's Degree
- Router Switch Configuration
- 3G/4G network driver test using TEMS™ Network Testing Portfolio
- Network monitoring using Zabbix
- Several tasks of passive network engineer

### Educations

#### • Master of Science, 2021 - Present

IAUM, Computer Networks

GPA: 19.36/20

Master's thesis:

Design & Evaluation of a Tightly Coupled UWB/INS/GIS Indoor Positioning System  
Applying Machine Learning Methods in CloudIoT.

#### • Bachelor of Science, 2015 - 2020

FUM, Computer System Architecture

GPA: 16.39/20

Bachelor's project:

Development of Cryptocurrency Mining Rig  
Energy Monitoring System.

#### • Diploma, 2011 - 2014

ATM, Mathematics and Physics

GPA: 19.76/20

### Skills

#### Operating Systems

Linux, Yocto, Buildroot, and RTOS  
Familiar with U-Boot, and EDK II

#### Programming Languages

Experienced in C/C++, C#, Bash Scripting  
Familiar With Python, and Qt

#### Printed Circuit Board (PCB)

Altium Designer, SPICE, DC Circuits  
Expert in PCBA (Soldering) & Prototyping

#### Guidelines

Scrum, DfX, DFM, DFA, DFT, EMC/EMI/ESD

#### MCU, SBC, and SoC

STM32 and ESP32 MCUs, NVIDIA Jetson,  
Raspberry Pi, and Beagle Bone SBCs

#### Wireless Communications

Wi-Fi, Bluetooth, Zigbee, UWB, LoRaWAN, and  
Mesh Networking

#### Wired Communications

Ethernet, USB, GPIO, UART, SPI, I2C, I2S, ...  
RS232, RS485, KNX, CAN, Modbus, ...

#### DevOps

Experienced in Git, Docker, L7 Servers, ...  
Familiar with CI/CD, Grafana, Prometheus

## EDUCATIONAL EXPERIENCE

### Lecturer & Teaching Assistant

Sep 2017 - May 2020

#### Ferdowsi University of Mashhad

- Lecturer & Teaching Assistant besides collaborating in university laboratories.
- Lecturer of Internet of Things Basics (with [Dr.Sedaghat](#))
- Teaching Assistant of Computer Foundation and Programming ([Dr.Asadi](#)), Computer Networking ([Dr.Mohajerzadeh](#)), Network Security ([Dr.Ghaemi](#)), and Wireless Networks ([Dr.Hosseini](#))

### Embedded System Developer - Development of Cryptocurrency Mining Rig Energy Monitoring System

Jul 2020 - Dec 2020

#### FUM IP-PBX Lab

- Project of Bachelor's Degree
- This system comprises electric energy meter and website that shows data and statistics of energy consumption during cryptocurrency mining.
- Another version of this system is created to control home appliances power consumption using Wi-Fi mesh network.

### Embedded System Developer - Operating Room UVC Disinfection System

Jan 2020 - Jan 2020

#### FUM Robotics Lab

- This robot was created to clean hospital areas using high-power 360-degree UVC lights.
- The robots microprocessor, determines the duration of the UVC radiation based on the size of the room.

### Designing and Optimizing of FUM Campus Wi-Fi Network

Jul 2019 - Dec 2019

#### FUM Information & Communication Technology Center (ICT)

- The FUM ICT Center launched this initiative in response to the numerous issues with the high-density Wi-Fi network that have been observed, including network bandwidth issues, signal collection issues, and a lack of coverage.
- This project's primary tasks were designing network CAD plan, access point relocation, network settings adjustment, and site surveys.

### Executive Committee

Aug 2019 - Aug 2019

#### Ferdowsi University of Mashhad

- 16th International Information Security and Cryptology Conference
- Speaker at Information Security and Cryptology Village

### Embedded System Developer - IoT Gateway

May 2019 - Jul 2019

#### FUM IoT Lab

- All-in-One Gateway, which allows for a variety of interactions between the nodes and the server. Users, preferences, network nodes, and ultimately data transmitted over networks are all managed on the device's control page.
- Specifications: STM32F7, GSM, Wi-Fi, Ethernet, Bluetooth, Zigbee, LoRa, RF, and SD Card

### Embedded System Developer - IoT Call and SMS module

Oct 2018 - May 2019

#### IoT based Call and SMS module

- This device call a phone number and send individual or group text messages.
- The system contains hardware circuits and admin panel (website) for SMS scheduling and auto calling and also message planner. It has the ability to save user contacts to the internal Flash memory.

### Embedded System Developer - IoT Hotel Management System

Jun 2017 - Aug 2018

#### Co-Founder at Ashian Startup

- This startup's major objectives are a fully IoT-based hotel administration system and improved accommodations for its visitors.
- Guests can submit requests to the hotel desk, order goods, request cleaning, control lights, and more using the interior panels.

### Samrt Watch Application Developer - Monitoring of Burnt Chandelier Lights

Jan 2016 - May 2017

#### FUM Pattern Recognition Lab

- The goal of this endeavor is to locate any burned-out lights inside the fixtures.
- The core of this system is to measure how much total current is being used and send that data to the operator's wristwatch and finally the watch collects data and send it to the website.

Tehran  
25/03/2023

## Languages

### English

Professional working proficiency

### Persian

Native

## Certifications

- Building Automation using KNX Protocol - Feb 2018 from "Iran Technical & Vocational Training"
- PCB Designing - Dec 2017 from "Ferdowsi University of Mashhad College"
- GNU/Linux Foundation - Apr 2017 from "Ferdowsi University of Mashhad Linux User Group Association"

## Soft Skills

- Excellent leadership, communication and time management abilities
- Strong cooperation and partnership skills in job environment
- Outstanding planning and multi-tasking abilities
- Proven ability to work creatively along with problem-solving skills
- Talented to acquire new skills and develop team members
- Adaptable, diligent and capable of working autonomously when necessary
- Remarkable to make choices in difficult situations

