REZA DARESTANI

Firmware/Embedded System Developer

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Portfolio: https://mrdarestani.github.io/
Portfolio: https://www.mrdarestani.com/

EXPERIENCE

System Engineer - Hardware/Firmware Developer

FLUTTERCARE - Parttime

Sep 2023 – Present | Vancouver, Canada

- Led the multi-disciplinary design and release of the **smart wearable belly band** for monitoring the wellbeing of baby in pregnant individual. Contribute to **electrical, firmware, software**, and **mechanical design**, while ensuring compliance with **IEC** and **CSA** standards.
- Designed and optimized embedded firmware for **ESP32** microcontroller, improving system efficiency.
- Designed, prototyped, and tested **electrical circuits** and **PCBs**, ensuring reliability in medical application.
- Developed a communication package between firmware and software over **Wi-Fi** and **USART**.
- Key contributor to **verification, validation, risk analysis**, and **design** for **manufacturing/assembly**.
- Produced **technical documentation** and created detailed design documents including **flowcharts** and **process diagrams**.

Hardware Lead- Hardware/Firmware Developer

TEXAVIE - Parttime

Sep 2020 – Sep 2023 | Vancouver, Canada

- Led the multi-disciplinary design and release of the **smart glove** and **knee brace** for monitoring the hand and knee movement of individuals. Contribute to **electrical, firmware, software**, and **mechanical design**, while ensuring compliance with **IEC** and **CSA** standards.
- Designed **schematic diagrams** and **PCB layouts** including **analog**, **digital**, **sensors**, **data converters**, **power supplies**, and **microcontrollers.**
- Designed and optimized embedded firmware for **BMD350 (ARM Cortex-M + Bluetooth)** microcontroller, improving system efficiency.
- Conducted **debugging**, **problem-solving**, **root cause analysis**, and implemented **corrective actions** to improve product **reliability** and **performance**.
- Using **JTAG** to debug the **hardware and firmware** of the project.

Research Assistant

School of Biomedical Engineering, UBC

Sep 2018 – Sep 2024 | Vancouver, Canada

- Developed the novel **Smart Ureteral Stent for Wireless Kidney pressure monitoring** using **microfabrication techniques.**
- Oversaw lab operations, ensuring compliance with safety and procedural standards.
- Maintained and calibrated lab equipment, including power supplies, oscilloscopes, and spectrum analyzers.
- Demonstrate strong **technical writing** skills by effectively communicating complex research findings in high-impact publications.

Electronic Engineer & Project Management

HAMI NOZAD PARS | PARS SECURITY INDUSTRIAL

Sep 2013 – Oct 2018 | Tehran, Iran

- Handled projects involving **TFT LCD** technology, **EMWiN**, **RTOS** systems, and **IoT applications**..
- Conducted **tests and evaluations** on electrical systems and components to ensure functionality, safety, and compliance with standards and regulations.
- Designed and fabricated the **infant INCUBATOR** based on the **STM32F103** microcontroller with a **7-inch TFT** + resistive touch display that based on **Emwin RTOS firmware.**

COMPUTER SKILLS

C/C++, Python, MATLAB, C#	●●●●●
µc Prgrming – ARM Cortex-M	●●●●●
KiCad, Altium	●●●●●
SolidWorks, Onshape	●●●●○
VHDL, Assembly	●●●●○
MS Office	●●●●●
Version Control (Git)	●●●●○
PM Tolls (Jira, Trello)	●●●●●

KEY EXPERTISE

- Real-time data processing algorithms
- Firmware optimization
- PCB design
- Analog circuits
- Internet of Thing (IOT)
- Sensors
- Wireless communications
- Wi-Fi/BLE/Zigbee
- RTOS

STRENGTHS

- Real-time data processing algorithms
- Self-motivated
- Problem-solver
- Detail-oriented
- Multitasking
- Cross-functional collaboration
- Innovative

EDUCATION

B.Sc. in Electrical Engineering

UT – University of Tehran

Sep 2007 – Aug 2010 | Tehran, Iran

MSc. in Electrical Engineering

IAUT – Islamic Azad University Tehran

Sep 2010 – Aug 2013 | Tehran, Iran

PhD in Biomedical Engineering

UBC – University Of British Columbia

Sep 2018 – Aug 2024 | Vancouver, Canada

LANGUAGES

English	●●●●●
Persian	●●●●●

PERSONAL INTERESTS

Cycling
Board games
Puzzles
Karate