Farzad Mirbashiri
Product Design Engineer

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Profile
- A highly motivated engineer with 5+ years of experience in designing and developing embedded systems and physical products.
- Proficient in designing, prototyping, rapid electronic product manufacturing, testing, debugging and troubleshooting.
- Experience in developing low-level communication drivers (SPI, UART, I2C, USB).
- Work experience in design and creating production-ready drawing packages.
- Extensive experience in software development and programming
- Familiar with robotics and computer vision devices.
- Curious, positive attitude, complex problem solver with critical mindset.
- Dedicated team player, organized and task-oriented.

Technical Skills
- **Programming:** C/C++/C#, SWIFT, Flutter.
- **Microcontroller:** ESP8266, ESP32, AVR microcontrollers and STM32.
- **Professional Software:** AUTODESK Eagle, Altium Designer, Rhinoceros 3D, ST Microelectronic tools, Keil, MPLAB, Visual Studio Code, Xcode, Android Studio, Amazon Web Services, Google Cloud, LabVIEW, Postman, GitHub, Adobe illustrator, Meshmixer, Inkscape, GIMP, Cura, Mac, Windows and Linux(ubuntu).

Work Experience

Hardware and Embedded Engineer   Jan 2021-Jan 2022
Full-Time

Hygienic Echo Inc, (Biomedical Engineering), Development Team, Toronto

- Develop firmwares for STM32 and PIC microcontrollers in C.
- Design 2xLayer PCB, from prototyping to production (+1K unit).
- Develop embedded software in C# for better interaction with USB-Serial ports.
- Generate testing and debugging plans with customized test-beds.
- Create a new communication method to capture and record internal/external device errors such as ToF sensor short range or dirty glass.
- Create a new product from conception to patent-ready prototype.
- Design new tools to assist support and installation teams with system issues.
- Improve the installation process by 60% with re-architecting the firmwares.

Technical Analyst   Jan 2021-Jan 2022
Hourly-Paid

UHN-KITE (Toronto Rehab Research Institute), Toronto

- Maintaining in-house systems and upgrading devices firmware.
- Resolve design issues identified during customer trials.
- Optimize designs by sourcing and selecting parts.

Full Stack Product Design Engineer   2017-Present
Owner and founder
zad.solutions, (Electronic Product Development) Toronto

- End-to-end production design and manufacturing of electronic devices (i.e. ideation, concept design, prototyping, testing and evaluation, scaling and production)
- Analyze full cost of components, materials, properties and methods of production
- Design and produce 3D modeling, variations and calculations from concept to manufacturing detail and optimize ideas for a variety of manufacturing processes
- Perform PCB fabrication, assembly and micro-production (<100 units)
- Perform cold-casting for low-run plastic enclosure production (<200 units)
- Create system backend API in AWS IoT Core with the best approach for the project to save device data
- Design and develop mobile apps using Flutter

Completed projects in zad.solutions

- **IoT pH meter and regulator (P202) 2022**
  Cloud-Based digital pH meter, two calibration points and 12-bit ADC ±(0.1~0.01%). Isolated power supply, IPS SPI 240x240 display, Three captivate touch button, 2xLayer PCB(40x70 mm). *ESP32, C/C++, RESTful APIs, AWS, OTA, Flutter*

- **IoT Supplement/Medicine Tracker (PALLY)** 2022
  Smart medicine tracker using NFC technology with reminder and monitoring system. Custom size 13.56Mhz antenna, SPI 240x240, One special capacitive touch button and connector, 2xLayer PCB(D75 mm), *ESP32, C/C++, RESTful APIs, AWS, OTA, Flutter*

- **IoT Food Computer (CANNAOUI)** 2020
  All-in Deep water culture automated solution, designed and developed for growing plants in a small foot-print with minimum care, pH and EC meter with 12-bit ADC, Sun-simulator with 6 PWM channel full spectrum LED, *ESP32, C/C++, RESTful APIs, AWS, OTA, Web Application*

Software Product Engineer/Manager   2005-2015
Full-Time
Parslan, Tehran, Iran

Academic Education

Middle-Level Manager (MLM) Project Management | 2016-2017
Ryerson University, Canada
BSc, Industrial Engineering, Industrial Technology | 2001-2005
QIAU, Iran

Language Proficiency

Farsi:Mother tongue
English: Work proficiency