



JOB DESCRIPTION

Job Title: Controls Engineer, Software	FLSA Status: Exempt, Full Time
Reports to: CTO	Last Revision: 4/13/21

SUMMARY

This is for a position as part of a team tasked with the design and implementation of various products in the area of fuel cell power systems at H2 PowerTech LLC. The key responsibility of this position is the development of new, and support of existing, Windows PC applications and embedded Linux applications used for engineering, design validation testing, product prototyping, as well as production systems. The candidate filling this position will work on assignments that are complex in nature where judgment and initiative are required in resolving problems and making recommendations.

The ideal candidate is someone

- with a broad experience in multiple programming languages and methodologies, and the ability to learn new concepts quickly
- who brings a solid background of C#/.NET software development
- who has a working understanding of embedded Linux applications using Python

PRIMARY RESPONSIBILITIES

- Design, develop and implement custom Windows PC applications in Visual Studio C#/.NET that communicate with system microcontrollers for engineering system control, data collection, and custom-built test equipment.
- Develop and maintain embedded Linux applications using a cross-compiling development platform, including support of web, database, CANbus, SNMP, SMS feature sets.
- Ability to take a project from concept to completion, including system analysis and functional specification, design, prototyping, implementation, testing and troubleshooting.
- Adopt and expand existing software libraries for maximized code reusability.
- Work with other developers and engineers to develop innovative solutions to challenging technical problems.
- Select, test and integrate hardware and software components.
- Develop a strong fundamental understanding of existing fuel cell controls.
- Travel to our national and international partners for project and team activities.



MINIMUM QUALIFICATIONS

- Bachelor's Degree in Technology, or Engineering Degree or equivalent, specializing in computer science or computer engineering. BSCS or BSEE preferred.
- Minimum of 5 years of experience in software engineering.
- Strong proficiency in C# programming for Windows in Visual Studio.
- Experience with Python, including pandas, matplotlib, pysnmp, flask.
- Familiarity with one or more data transfer protocols such as RS-232, USB, SPI, CAN.
- Ability to develop low-level software requirements from high-level system requirements.
- Familiarity with software revision control systems.
- Demonstrated ability to integrate and control devices such as sensors, motors and valves.
- Strong inter-personal and communication skills in written and verbal form. Must be capable of communicating technical concepts clearly and concisely to all team members.
- Ability to work in a small team environment.
- Ability to follow an organized and disciplined approach to the software design process.

ADDITIONAL CONSIDERATION FOR THE FOLLOWING QUALIFICATIONS

- More than 10 years' experience in software engineering.
- Experience with WPF (Windows Presentation Foundation).
- Experience with HTML5/CSS/JavaScript/Ajax/jQuery.
- Experience with Yocto Project, BitBake.
- Experience with cellular network connectivity.
- Experience with VPN connectivity, strongSwan.
- Experience with the Linux OS.
- Experience in developing robust software architectures.
- Experience with relational databases (e.g. SQL Server or SQLite) and SQL queries.
- Experience with software controlled automated electro-mechanical systems.
- Experience with microcontrollers and firmware programming.
- Experience with the Keil Firmware Development Environment.
- Hands-on hardware wiring and integration experience
- Understanding of Fuel Cell Technology



WORKING CONDITIONS

Primary environment: Normal interior/office work environment and/or laboratory.

Secondary environment: Manufacturing environment. May be exposed to loud noises, changing temperatures, machinery with moving parts, and exotic materials.

PHYSICAL REQUIREMENTS

Sitting, bending, reaching, lifting up to 50 lbs, manual dexterity, visual acuity, typing, driving, travel in aircraft with overnight stays in the United States and other countries.

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