Puzzle Medical
Devices

JD–057

MONTREAL, Senior Firmware Engineer, full-time, in-person

Puzzle Medical Devices® inc. is developing a percutaneous heart pump for patients with advanced heart failure. The device's modular design allows for safe percutaneous implantation to support both renal and cardiac function through 4mm-pumps anchored in parallel in the descending aorta, allowing stability for patient mobility. To date, Puzzle Medical Devices® inc. has successfully: completed a Series A financing round (2023); completed its first-in-human study with all patients experiencing improvements in cardiac and kidney function (2022); received U.S. Food and Drug Administration (FDA) Breakthrough Device Designation (2021).

POSITION SUMMARY

Puzzle Medical Devices® inc. is currently seeking a Senior Firmware Engineer with 8+ years of experience to develop and maintain the embedded system that powers our medical device. Working on-site in Montreal, you will be responsible for the full embedded development lifecycle—from early-stage design through production. You will collaborate closely with a cross-functional team to ensure our product meets stringent quality and regulatory requirements, directly impacting patient health and safety.

ROLE AND RESPONSIBILITIES

- Design, develop, and maintain embedded firmware primarily in C/C++ for real-time applications
- Design and implement protocols for communication between embedded systems
- Estimate timelines and provide risk assessments for planning and tracking work
- Establish and manage code architecture, development environments, and CI/CD pipelines
- Develop firmware, scripts, and applications to automate software testing
- Serve as a technical leader for other team members, sharing best practices and promoting knowledge transfer
- Collaborate with electronics and test engineers on board bring-up, debugging, and performance optimization

QUALIFICATIONS

- Bachelor's or higher in Electrical Engineering, Computer Engineering, Computer Science, or a related field
- 8+ years of experience in embedded firmware development, particularly in C/C++
- Proven track record of taking embedded products from concept to release in a medical or similarly regulated environment
- Extensive experience with RTOS (threading, optimization, memory management, and interrupt handling)
- Hands-on expertise with debugging tools (oscilloscopes, logic analyzers, debuggers) and version control (Git/GitLab)
- Experience with embedded C unit testing (e.g., CMock, Unity, or similar)
- Strong knowledge of Wi-Fi and Ethernet protocols (TCP/IP, MQTT)
- Familiarity with object-oriented programming in C++ or Python
- Knowledge of IEC 62304 medical device standard
- Knowledge of embedded graphics libraries and graphics controllers (e.g. LVGL, TouchGFX, EVE4)
- Strong communication skills, with the ability to work effectively across cross-functional teams
- Ability to work independently and in a team environment

Note: This job description is intended to provide a general overview of the position. It is not an exhaustive list of responsibilities, qualifications, or requirements. The employer reserves the right to modify the duties or requirements of the position as needed.