

Full-stack Software Developer

Company: Corvita Biomedical Inc.

Location: Greater Toronto Area, Ontario, Canada - Hybrid

Position Type: Full-Time, Permanent

Experience Level: Mid-Career (3+ years)

Start Date: Immediate

About Corvita Biomedical

Corvita Biomedical Inc. is a dynamic startup on a mission to transform neonatal and perinatal healthcare. We're developing the next generation of smart portable Neonatal Intensive Care Units (NICU) that will save and improve the lives of premature infants worldwide. By combining edge computing, machine vision, AI and sensor consolidation with human-centered design, we're addressing critical gaps in neonatal care systems across Canada and beyond. As a member of our team, you'll have the unique opportunity to directly impact infant mortality rates and health outcomes on a global scale.

The Opportunity

We are seeking an exceptional Full-stack Software Developer to architect and develop comprehensive software solutions that bridge our smart neonatal incubators with cloud-based & on edge analytics and healthcare systems. This role represents a unique opportunity to build end-to-end software platforms that will enable real-time monitoring, predictive analytics, and data-driven insights for life-critical medical devices deployed in hospitals worldwide.

As our Full-stack Software Developer, you will be the technical authority on cloud architecture, data pipelines, and user interface development for our connected medical device ecosystem. You'll work at the intersection of embedded systems, IoT, cloud computing, and healthcare informatics, creating robust platforms that must meet the highest standards of reliability, security, and regulatory compliance. This is your chance to leverage your full-stack expertise to build software systems that will directly save infant lives and revolutionize how healthcare providers monitor and care for premature infants.

Key Responsibilities

Device-to-Cloud Integration

- Develop telemetry interfaces on medical devices to record, package, and transmit critical patient and system data
- Implement IoT messaging protocols and cloud services for reliable real-time and offline data handling
- Design edge computing solutions for local data processing and intelligent data synchronization

Backend Development & Cloud Architecture

- Build and maintain scalable data ingestion and validation pipelines using Python, Node.js, and modern cloud services
- Design microservices architecture for modular, maintainable, and scalable backend systems
- Implement event-driven architectures for real-time data processing and alerting
- Develop serverless functions for compute-intensive analytics and machine learning model deployment
- Create data lakes and warehouses for long-term storage and historical analysis
- Design and enforce data validation, security, and controlled access mechanisms

Database & Query Optimization

- Design and implement database schemas for time-series medical data using both SQL and NoSQL solutions
- Develop robust queries ensuring fast data access even with missing or incomplete sensor readings
- Optimize database performance for high-volume sensor data ingestion and real-time analytics
- Implement data partitioning, indexing, and caching strategies for optimal performance
- Manage cloud-based infrastructure for development, staging, and production environments

Frontend Development & User Experience

- Develop responsive web applications and dashboards using React, Vue.js, or Angular frameworks
- Create intuitive visualizations for complex medical data including real-time vitals, trends, and predictive analytics
- Implement interactive data exploration tools for clinicians and researchers
- Design mobile-responsive interfaces for bedside monitoring and remote patient management
- Build progressive web applications (PWAs) for offline functionality in connectivity-limited environments
- Collaborate with UI/UX designers and clinicians to ensure interfaces meet healthcare workflow requirements

Computer Vision & Machine Learning Integration

- Work closely with machine vision specialists to integrate image processing pipelines and AI models
- Develop APIs for computer vision services including infant movement detection and vital sign monitoring
- Create data annotation tools and interfaces for machine learning model training
- Implement real-time video streaming and processing capabilities for visual monitoring systems
- Build model deployment pipelines for continuous integration of improved AI algorithms

Security, Compliance & Medical Standards

- Apply secure authentication and encryption best practices throughout the technology stack
- Implement role-based access control (RBAC) tailored to healthcare providers, administrators, and technical staff
- Ensure compliance with medical device cybersecurity standards (FDA, ISO/IEC 81001-5-1, UL 2900)

System Integration & Interoperability

- Develop HL7 FHIR interfaces for integration with hospital information systems
- Create data export capabilities for electronic health records (EHR) integration
- Build APIs for third-party system integration and partner ecosystem development
- Implement webhook systems for event-driven integrations with external platforms

Required Qualifications

Education

- Bachelor's degree in Computer Science, Software Engineering, Computer Engineering, or related field
- Master's degree in Computer Science, Health Informatics, or related field considered a strong asset

Technical Expertise

- 3-7 years of proven experience in full-stack software development
- Strong proficiency in multiple programming languages including Python, JavaScript/TypeScript, Java, or C#
- Extensive experience with modern web frameworks (React, Vue.js, Angular) and state management solutions
- Deep understanding of cloud platforms (AWS, Azure, or GCP) and infrastructure-as-code tools
- Hands-on experience with containerization (Docker) and orchestration (Kubernetes)
- Proficiency with both SQL and NoSQL databases
- Experience with message queuing systems and event streaming
- Strong understanding of RESTful API design, GraphQL, and WebSocket protocols
- Experience with CI/CD pipelines, automated testing, and DevOps practices
- Familiarity with embedded systems communication and IoT protocols

Domain Knowledge

- Understanding of medical device software development lifecycle (IEC 62304)
- Experience with healthcare data standards (HL7, FHIR, DICOM)
- Knowledge of data security and privacy regulations (HIPAA, PIPEDA, GDPR)
- Familiarity with time-series databases and real-time analytics platforms
- Understanding of edge computing and fog architectures for IoT systems
- Experience with data visualization libraries and dashboard frameworks

Professional Skills

- Strong system design and architecture skills with ability to make technology trade-offs
- Excellent problem-solving abilities with systematic approach to debugging distributed systems
- Experience working in cross-functional teams including hardware engineers and clinicians
- Strong communication skills to translate technical concepts for non-technical stakeholders
- Ability to mentor junior engineers and provide technical leadership



- Self-motivated with ability to balance multiple projects and priorities

What We Offer

Impact & Purpose

- Build software platforms that directly contribute to reducing infant mortality rates globally
- Create technology that empowers healthcare providers with actionable insights and predictive analytics
- Shape the future of connected medical devices and digital health ecosystems

Growth & Development

- Technical leadership opportunities with direct influence on platform architecture
- Mentorship from industry veterans in medical device development and healthcare technology
- Clear path to Staff Engineer or Engineering Manager roles as the company scales
- Exposure to cutting-edge technologies in IoT, AI/ML, and healthcare informatics

Innovation & Autonomy

- Freedom to architect solutions and make critical technical decisions
- Access to modern cloud infrastructure and development tools
- Collaboration with world-class clinicians, researchers, and machine learning specialists
- Opportunity to publish papers and present at healthcare technology conferences

Compensation & Benefits

- Comprehensive health and dental benefits package

Join Our Mission

Every year, 15 million babies are born prematurely worldwide, and inadequate incubation technology contributes to millions of preventable deaths and disabilities. At Corvita Biomedical, we're building the software infrastructure that transforms isolated medical devices into intelligent, connected systems that provide continuous insights and predictive care. Your expertise in full-stack development will create the digital nervous system that monitors thousands of premature infants simultaneously, alerting clinicians to critical changes and predicting complications before they occur. This is more than building applications, it's creating platforms that will save lives through data-driven insights and intelligent automation.

How to Apply

Please submit the following to hello@corvita biomedical.com:

- Resume/CV
- Cover letter



- Portfolio or GitHub profile showcasing relevant projects (optional but strongly encouraged)

Application Deadline: Applications reviewed on a rolling basis until position is filled

Corvita Biomedical Inc. is an equal opportunity employer committed to building a diverse and inclusive team. We welcome applications from all qualified candidates, including those from underrepresented groups in STEM. We are committed to providing accommodation for people with disabilities throughout the recruitment process.

Why Choose Corvita?

Join a team where your code directly translates into saved lives. Unlike traditional software roles focused on e-commerce or social platforms, at Corvita your software will monitor and protect premature infants 24/7, providing clinicians with the insights they need to make life-saving decisions. This is your opportunity to apply advanced software engineering to solve one of healthcare's most critical challenges while working in a dynamic startup environment where your technical decisions shape the future of neonatal care technology.