



Embedded Systems & Data Engineer

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 mission-driven medical device startup transforming neonatal healthcare globally. We are developing the ARK Incubator – a portable, AI-powered, dual-infant neonatal life support system designed to democratize access to intensive care for premature and critically ill newborns. Our technology addresses the global crisis where millions of infants die annually due to lack of access to proper neonatal intensive care, particularly in underserved communities, rural areas, and humanitarian settings. 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 Cloud Engineer to architect and build the cloud infrastructure that powers the ARK Incubator ecosystem. This role is the backbone of our connected medical device platform – you will design and implement the data pipelines, cloud services, and infrastructure that enable real-time monitoring, telehealth capabilities, and our NOA-AI diagnostic assistant to function reliably across thousands of deployed devices worldwide.

As our Cloud Engineer, you will be responsible for building a scalable, secure, and highly available platform that ingests continuous streams of vital sign data, powers AI-driven analytics, and enables healthcare providers to monitor and manage premature infants remotely. Your infrastructure will be the foundation upon which life-saving decisions are made – reliability is not optional, it is essential.

Key Responsibilities

Cloud Infrastructure & Architecture

- Design and implement scalable cloud architecture using AWS, Azure, or GCP to support thousands of connected ARK Incubators globally
- Build infrastructure-as-code solutions using Terraform, CloudFormation, or Pulumi for reproducible, version-controlled deployments
- Implement containerization strategies using Docker and orchestration with Kubernetes for microservices deployment
- Design multi-region architectures ensuring high availability and disaster recovery for life-critical medical data
- Optimize cloud costs while maintaining performance and reliability standards

Data Backbone & Pipeline Development

- Build real-time data ingestion pipelines capable of processing continuous streams of vital signs, sensor readings, and device telemetry from deployed incubators

- Design and implement time-series databases optimized for medical data storage, retrieval, and analysis
- Create data lakes and warehouses for long-term storage supporting clinical research and machine learning initiatives
- Implement event-driven architectures using message queuing systems (Kafka, RabbitMQ, AWS SQS) for reliable data processing
- Build data validation, transformation, and quality assurance pipelines ensuring data integrity for clinical decision-making

NOA-AI Infrastructure

- Design and deploy infrastructure supporting the NOA-AI diagnostic assistant, including machine learning model serving and inference pipelines
- Build scalable compute infrastructure for AI model training, validation, and continuous improvement
- Implement MLOps pipelines for automated model deployment, monitoring, and rollback capabilities
- Create real-time alerting systems that process AI predictions and deliver clinical notifications with sub-second latency
- Support integration of machine vision workloads including video stream processing and image analysis

IoT & Device Connectivity

- Implement IoT hub services and protocols (MQTT, CoAP, HTTPS) for secure device-to-cloud communication
- Design edge computing solutions for local data processing and intelligent synchronization in connectivity-limited environments
- Build device provisioning, authentication, and over-the-air update systems
- Create offline-capable architectures that maintain data integrity and sync reliably when connectivity is restored

Security & Compliance

- Implement healthcare-grade security controls compliant with HIPAA, PIPEDA, and GDPR requirements
- Design and enforce encryption strategies for data at rest and in transit
- Build role-based access control (RBAC) systems tailored for healthcare providers, administrators, and technical staff
- Implement security monitoring, audit logging, and incident response capabilities
- Ensure compliance with medical device cybersecurity standards (FDA guidance, ISO/IEC 81001-5-1, UL 2900)

DevOps & Site Reliability

- Establish CI/CD pipelines for automated testing, deployment, and infrastructure changes
- Implement comprehensive monitoring, alerting, and observability using tools like Prometheus, Grafana, and ELK stack
- Design and maintain staging and production environments with proper isolation and testing procedures
- Build automated scaling and self-healing infrastructure to maintain uptime for life-critical systems

Required Qualifications

Education

- Bachelor's degree in Computer Science, Software Engineering, Computer Engineering, or related field
- Master's degree in Cloud Computing, Data Engineering, or related field considered a strong asset

Technical Expertise

- 3-7 years of experience in cloud engineering, infrastructure development, or site reliability engineering
- Deep expertise with at least one major cloud platform (AWS, Azure, or GCP) and relevant certifications
- Strong proficiency in infrastructure-as-code tools (Terraform, CloudFormation, Pulumi)
- Hands-on experience with containerization (Docker) and orchestration (Kubernetes)
- Experience with streaming data platforms (Kafka, Kinesis) and message queuing systems
- Proficiency in programming languages including Python, Go, or Node.js for automation and tooling
- Experience with both SQL and NoSQL databases, particularly time-series databases (InfluxDB, TimescaleDB)
- Understanding of CI/CD pipelines and DevOps practices

Domain Knowledge

- Experience with IoT platforms and device-to-cloud communication protocols
- Understanding of machine learning infrastructure and MLOps practices considered a strong asset
- Knowledge of healthcare data standards (HL7 FHIR) and privacy regulations (HIPAA, PIPEDA) preferred
- Experience in medical device or regulated industry environments highly valued

Professional Skills

- Strong system design skills with ability to architect solutions for reliability, scalability, and security
- Excellent problem-solving abilities with systematic approach to debugging distributed systems
- Experience working in cross-functional teams including software developers, data scientists, and clinical staff
- Strong communication skills to document infrastructure and collaborate with diverse stakeholders
- Self-motivated with ability to work independently and manage multiple priorities

What We Offer

Impact & Purpose

- Build cloud infrastructure that directly contributes to reducing infant mortality rates globally



- Create the data backbone that powers AI-driven clinical insights and predictive analytics
- Enable healthcare providers in underserved communities to deliver life-saving care

Growth & Development

- Technical leadership opportunities with direct influence on platform architecture
- Exposure to cutting-edge technologies in IoT, AI/ML infrastructure, and healthcare informatics
- Clear career progression path as the company scales
- Mentorship from industry veterans in medical device development

Compensation & Benefits

- Competitive salary commensurate with experience
- Equity participation in early-stage medical device company
- Comprehensive health and dental benefits package
- Flexible hybrid work arrangement

Join Our Mission

Every year, 15 million babies are born prematurely worldwide, and millions die due to inadequate access to neonatal intensive care. At Corvita Biomedical, we're building the connected infrastructure that will change this reality. As our Cloud Engineer, your work will form the nervous system of our platform – ensuring that vital data flows reliably from deployed incubators to healthcare providers, that our AI systems have the compute resources they need, and that every alert reaches clinicians in time to make a difference. This is more than building cloud infrastructure – it's creating the foundation for a global network that saves lives.

How to Apply

Please submit the following to hello@corvitabiomedical.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.