



# LAUNCHCLOUD LABS

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## Senior Position Description: Biomedical Engineering Intern – Lead Technologist

**Project:** FirstLight | EventHorizon (FLEH)

**Company:** LaunchCloud Labs (LCL)

**Role Type:** Senior Leadership Practicum / Clinical Engineering Management

### I. Executive Summary & Mission

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LaunchCloud Labs (LCL) is a vertically integrated R&D laboratory specializing in the "Cloud to Chip" lifecycle. Our flagship medical device, **FirstLight | EventHorizon (FLEH)**, is an AI-driven clinical "Black Box" for EMS environments. The **Lead Technologist Intern** serves as the primary technical pivot between high-level system architecture and the R&D technician cohort. This role is designed for senior or graduate-level engineers to master the complexities of leading a technical team within a medical-grade R&D environment.

### II. Advanced Technical Oversight

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- **Architectural Synchronization:** Oversee the logical mapping between edge-hardware (NVIDIA Jetson/ESP32) and the clinical AI engine. You will ensure that raw sensor data (mic arrays, cameras, biometrics) is structurally sound for high-speed Medical NLP processing.
- **Clinical Data Integrity (SMART on FHIR):** Lead the implementation and validation of HL7/FHIR interoperability. You will verify that all structured medical narratives generated by the AI are valid for injection into Electronic Health Record (EHR) systems like Epic and Cerner.
- **Sovereign Infrastructure Management:** Coordinate the deployment of self-hosted, sovereign development environments. This includes overseeing the integrity of internal repos, deployment scripts, and the **15-Minute ACK operational protocol** for technical synchronization.
- **Security & Encryption Oversight:** Direct the implementation of medical-grade data security, including full-disk encryption (LUKS), secure boot on edge nodes, and HIPAA-compliant data transit protocols.

### III. Leadership & Academic Administration

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- **Team Orchestration:** Lead daily stand-ups for the R&D intern cohort. You are responsible for identifying technical blockers, reallocating laboratory resources, and maintaining the project's overall development velocity.
- **Technical Mentorship & QA:** Act as the first line of review for Design History Files (DHF) and technical documentation. You will mentor junior technicians in the "Fixer" mindset—utilizing AI tools for rapid debugging, unit testing, and static analysis.
- **Academic Compliance Liaison:** Coordinate directly with university faculty to ensure all laboratory activities satisfy the specific learning outcomes of the intern cohort. You will administer technical evaluations and help track verifiable activity logs for university credit.

### IV. Candidate Profile & Requirements

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- **Academic Standing:** Senior or Graduate-level student in Biomedical Engineering (Florida Institute of Technology).
- **Full-Stack Hardware/Software Literacy:** Must be comfortable navigating Linux (Ubuntu), microcontrollers (ESP32), and AI/LLM prompt engineering.
- **The "Fixer" Philosophy:** A proven ability to solve complex system failures independently. You must demonstrate high "Technical Empathy"—the ability to understand and fix bottlenecks across different engineering disciplines (Electrical, Mechanical, Software).
- **Leadership & Communication:** Prior experience leading teams or major capstone projects is required. Must communicate technical risks clearly to the Lead Architect.

### V. Supervision & Evaluative Deliverables

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This role provides the highest level of leadership credit available in the LCL internship program.

- **Reporting:** Direct report to the Lead Architect/Founder for strategic and architectural mentorship.
- **Leadership Portfolio:** The intern will produce an Engineering Management Portfolio, documenting technical project milestones, team velocity charts, and successful clinical trial integrations.
- **Final Clinical Engineering Assessment:** A comprehensive evaluation of the intern's ability to lead a team through a full medical device V&V (Verification & Validation) cycle.

### VI. Equal Opportunity & Compliance

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LCL provides equal opportunity to all leadership candidates. All activities are conducted in strict accordance with HIPAA, OSHA, and university digital compliance standards.