Project Vision Statement

Project Name: LinkrAI

Team Info

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Industry Partnership Info

Company	Mentor Name	Email
Artera	Anav Sanghvi	Anav.Sanghvi@artera.io

Artera, formerly known as Well Health, is a technology platform that enhances patient communication by streamlining the workflow for healthcare professionals. It automates routine tasks such as scheduling and sending reminders, allowing healthcare teams to focus more on patient care and less on administrative duties.

Project Overview

The Hand-off Agent is a flexible framework designed to enable seamless transitions between automated systems and human professionals across various areas in the healthcare environment. In modern healthcare settings, handoffs are often needed — whether that be from chatbot to medical professional or return agent to customer service. Our framework leverages Natural Language Processing (NLP) and LLMs to intelligently detect when human intervention is needed, and automatically routes the conversation to the appropriate department with full contextual information. Designed as a plug-and-play solution, this framework can be integrated into diverse healthcare scenarios—from patient communication platforms and telehealth systems to emergency response workflows and care coordination tools. By providing a standardized, intelligent handoff mechanism that preserves context and prioritizes critical information, the Hand-off Agent reduces medical errors, improves care efficiency, and enhances patient safety across the entire healthcare ecosystem.

Current Solutions

● Hyro AI: Provides conversational AI assistants for healthcare systems to handle patient intake, scheduling, and FAQs. Its handoffs to human agents are rule-based and static, without adaptive detection of when human intervention is necessary.

● Microsoft Health Bot: A framework that allows healthcare providers to deploy virtual assistants for triage and basic patient guidance. However, it requires manual configuration for escalation to humans and does not maintain full context across systems during transitions.

● Nuance DAX (Dragon Ambient eXperience): Captures and transcribes clinical conversations to assist providers with documentation, improving efficiency but not managing multi-agent coordination or automated-to-human workflow transfers.

Project Outcomes

The LinkrAI handoff system enables seamless transitions between AI-driven systems and human professionals in healthcare environments. By using A2A for multi-agent communication and MCP for tool interoperability, the framework ensures that all patient context, interaction history, and identified concerns are securely passed during each handoff. This reduces information loss, minimizes medical errors, and improves workflow efficiency for healthcare teams. The system enhances patient safety, shortens response times, and ensures continuity of care by allowing automated and human systems to collaborate fluidly across multiple touchpoints.

Key Features

Handoff Intelligence
● Automated detection of when human intervention is needed using NLP and LLMs
● Dynamic routing to the correct human or agent based on context and availability
● Full conversation and data capture to maintain continuity during transfer
● Prioritization of critical patient information in real-time handoffs

Agent Interoperability
● Integration with A2A Protocol for multi-agent orchestration
● MCP support for tool and data access across different systems
● Modular design allowing plug-and-play integration with telehealth and EHR platforms
● Context preservation between agents to prevent repeated questioning or lost details

Human Collaboration Tools

- Intuitive dashboard for clinicians to review, edit, and respond to AI-generated context
- Secure communication between automated systems and healthcare professionals
- Logging and audit trail for compliance, quality assurance, and transparency

Other Key Features
- Configurable escalation thresholds and fallback-to-human safety modes
- Real-time monitoring dashboard for handoff analytics and system performance
- HIPAA-compliant privacy and encryption protocols
- Scalable architecture adaptable to multiple healthcare use cases

Technologies

Front-End: React or Next.js (web interface), React Native (mobile)
Back-End: FastAPI / Node.js with REST + WebSocket or SSE for live updates
Database: PostgreSQL, Firebase, or MongoDB for structured context storage
AI/ML: OpenAI / Anthropic APIs, Hugging Face Transformers, spaCy for NLP
Agent Framework: Strands SDK (A2A-compatible), MCP protocol for external tool calls
Messaging & Real-Time Communication: WebRTC, Socket.io, or Twilio
Authentication & Security: OAuth 2.0, JWT, HIPAA-compliant encryption, RBAC
DevOps & Hosting: AWS / GCP, Docker, Kubernetes for scalable deployment
Monitoring & Analytics: Prometheus, Grafana, Sentry, Google Analytics
Version Control & Collaboration: GitHub, VS Code, Postman for API testing

Process Model

Agile Development: Employ short sprints with iterative deliverables to ensure flexibility and rapid adaptation to feedback from mentors and healthcare professionals.
Design Phase: Map healthcare workflows requiring AI-to-human transitions and design intuitive UI/UX for both chatbot and clinician dashboards. Create mock integrations with existing Artera communication tools.
Development Phase: Build the core handoff detection module, integrate A2A for agent orchestration, and enable MCP for tool interoperability. Conduct daily standups to synchronize team progress.
Testing Phase: Perform end-to-end simulations of patient interactions, verifying accuracy, latency, and data security. Conduct user testing with clinicians to evaluate clarity and context retention during handoffs.
Deployment: Deploy MVP in a sandboxed cloud environment, integrate with Artera's test API, and monitor performance metrics.
Continuous Improvement: Collect feedback from healthcare professionals, refine escalation logic, optimize NLP models, and expand to other medical and customer-service applications.