ArogyaLoka: HealthBridge AI - Empowering Underserved Patients Across the Developing World Through a Multilingual, AI-Powered System for Equitable Medical Guidance, Diagnostic Image Support, and Health Monitoring

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Over 400 million people lack access to basic healthcare globally, with physician-to-patient ratios below 1 per 10,000 in low-resource regions. Language barriers, limited diagnostic infrastructure, and specialist shortages worsen this crisis across Sub-Saharan Africa, South Asia, and Southeast Asia, leaving millions vulnerable to preventable conditions. ArogyaLoka: HealthBridge AI is an interdisciplinary, human-centered platform designed to address these disparities through three integrated modules. The first module uses a Retrieval-Augmented Generation (RAG) pipeline connected to a verified medical knowledge base, combined with native-language natural language processing to deliver accurate, context-aware health guidance, expanding equitable access to reliable medical information. The second module leverages GROQ-accelerated medical image analysis for real-time interpretation of MRI scans and ECG outputs, translating complex clinical data into actionable insights that support early detection at the community level, without invasive or animal-based methods. The third module introduces a low-cost sensor framework integrating piezoelectric, MPU6050, and flex sensors, creating a scalable electrical engineering pathway for continuous physiological monitoring across the Global South. Evaluated against benchmarks for diagnostic accuracy, language coverage, and processing latency, results demonstrate that AI-driven multilingual platforms can advance research, development, and innovation in global health equity. ArogyaLoka reflects a commitment to serving society through science, proving that intelligent, interdisciplinary medical support is both technically achievable and morally necessary for underserved populations.

Awards Won:
Non-Trivial Ventures: Non-Trivial Fellowship Scholarship