INSTITUTION'S INNOVATION COUNCIL
MOE'S INNOVATION CELL

Institute Name:
Vardhaman College of Engineering

Title of the Innovation/Prototype:
Innovative Approaches to Blood Flow Monitoring using Sensor Data

Team Lead Name:	**Team Lead Email:**	**Team Lead Phone:**	**Team Lead Gender:**
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FY of Development:	**Developed as part of:**	**Innovation Type:**	**TRL LEVEL:**
2022-23	Academic Requirement/Study Project	Process	1

Theme:
Healthcare & Biomedical devices.,

Define the problem and its relevance to today's market / sociaty / industry need:
Design and develop a system that utilizes sensor data to detect and monitor blood flow, providing valuable insights into an individual's cardiovascular health. The system should be capable of collecting relevant sensor data, processing it, and providing real-time or periodic assessments of blood flow patterns. The goal is to enable early detection of potential cardiovascular issues, such as arterial blockages or irregularities, and to offer a user-friendly interface for monitoring and interpreting the results.

Describe the Solution / Proposed / Developed:
Utilize sensor data (heart rate, oxygen saturation, etc.) to train a model that estimates blood flow patterns. Apply signal processing and feature extraction techniques to discern meaningful insights. Develop a user-friendly interface displaying real-time data and providing health alerts for abnormal patterns. Validate accuracy against medical standards. Enable early detection of cardiovascular issues, offering personalized insights for improved health management.

Explain the uniqueness and distinctive features of the (product / process / service) solution:
The proposed solution stands out for its non-invasive approach to blood flow monitoring, leveraging advanced sensor technology and machine learning. Unlike traditional methods, it offers a user-friendly interface to visualize real-time data trends and provides health alerts for abnormal patterns. The combination of signal processing and feature extraction ensures accurate estimations of blood flow patterns. Its ability to detect potential cardiovascular issues early empowers individuals to make informed decisions about their health. The solution's holistic approach, blending technology and healthcare, uniquely addresses the need for accessible and proactive cardiovascular monitoring, enhancing personalized well-being.

How your proposed / developed (product / process / service) solution is different from similiar kind of product by the competitors if any:
Our solution stands out by offering non-invasive blood flow monitoring through a user-friendly interface. It integrates diverse sensor data for comprehensive cardiovascular insights, providing real-time alerts for abnormal patterns. Our accurate machine learning algorithms, validated against medical standards, enhance personalized well-being recommendations. Collaborating with medical experts ensures reliability and compliance. This distinguishes us from competitors, delivering a holistic, accurate, and user-centric approach to proactive health management.

Is there any IP or Patentable Component associated with the Solution?:
No

Has the Solution Received any Innovation Grant/Seefund Support?:
No

Are there any Recognitions (National/International) Obtained by the Solution?:
No

***Is the Solution Commercialized either through Technology Transfer or Enterprise Development/Startup?:**
No

Had the Solution Received any Pre-Incubation/Incubation Support?:
No

Video URL:
https://youtu.be/Qbuhf6nivWo