**Intelligent Ai Multi-Sensor Rescue System for Landslide Survivors**

**Objective:**

Landslides pose a severe threat to human life, often trapping individuals beneath soil and debris, making timely and precise rescue operations critical. Traditional search methods struggle with accuracy, leading to delays and false detections. To address this, we propose an integrated multi-sensor system that enhances human detection under soil during landslides, minimizing false positives and maximizing rescue efficiency.

**Methodology:**

* The proposed system leverages Ground-Penetrating Radar (GPR), Infrared & Thermal Imaging, Acoustic & Seismic Sensors and Microwave Doppler Radar to detect human-specific biological signals
* These signals are processed using AI-driven deep learning models to distinguish humans from animals and other environmental anomalies
* Additionally, autonomous drones and IoT-enabled devices facilitate real-time detection and communication with rescue teams.

**Key Features:**

* Multi-Sensor Fusion: Integrates diverse sensing technologies to improve detection accuracy
* AI-Powered Classification: Uses deep learning to differentiate human signals from non-human sources.
* Real-Time Monitoring: Sends data to emergency responders for faster rescue operations.
* Portable & Scalable: Deployable via drones and robotic probes for efficient field implementation.

**Abstract Statement:**

The Intelligent Multi-Sensor Rescue System is designed to detect and locate landslide survivors with high accuracy, minimizing false positives and enhancing rescue efficiency. By integrating advanced sensing technologies such as Ground-Penetrating Radar, Thermal Imaging, Acoustic & Seismic Sensors, and Gas Detection, the system identifies human presence beneath debris. Machine learning algorithms process real-time data to distinguish humans from other objects, ensuring precise detection. Deployable via drones. This innovative solution accelerates emergency response, increases survival rates, and revolutionizes disaster management with cutting-edge technology**.**

**Expected Outcome:**

This system aims to enhance disaster response efficiency, significantly reducing search time and increasing survival rates for landslide victims. Continuous learning through AI adaptation and real-world testing ensures improved accuracy in diverse conditions.

**Impact:**

Thus offering a life-saving solution through advanced technology, enhancing disaster response, promoting resilient infrastructure, and ensuring the safety and well-being of communities affected by landslides.