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### Patent Search

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#### Abstract:

The present invention discloses an IoT-based System and Method for Estimating Lung Cancer Probability. In the present invention, the system incorporates an array of collection devices, a data preprocessing module, a feature extraction module, a machine learning model, and a continuous monitoring and feedback module. It collects related data, preprocesses it, identifies informative features, applies machine learning to estimate lung cancer probability, and updates the estimations in real-time with feedback when a high risk of lung cancer is predicted. Accompanied Drawing [FIGS. 1-2]

#### Complete Specification

Description:[001] The present invention generally relates to the field of medical technology, specifically to an Internet of Things (IoT) system and associated method for estimating the probability of lung cancer in individuals. The invention more particularly relates to an IoT-based System and Method for Estimating Lung Cancer Probability.

#### BACKGROUND OF THE INVENTION

[002] The following description provides the information that may be useful in understanding the present invention. It is not an admission that any of the information provided herein is prior art or relevant to the presently claimed invention, or that any publication specifically or implicitly referenced is prior art.

[003] Further, the approaches described in this section are approaches that could be pursued, but not necessarily approaches that have been previously conceived or pursued. Therefore, unless otherwise indicated, it should not be assumed that any of the approaches described in this section qualify as prior art merely by virtue of their inclusion in this section.

[004] Lung cancer remains a leading cause of mortality worldwide, and early detection is key to improving survival rates. Currently, traditional diagnostic methods rarely detect lung cancer until it is in its advanced stages. Therefore, a system capable of continuously monitoring individuals' health status and estimating their probability of developing lung cancer could provide significant benefits, including prompt medical intervention.

[005] A significant obstacle in diagnosing lung cancer, especially during its initial stages when treatments can be most beneficial, involves obtaining cell samples for diagnosis. Lung cancer in its early stages often presents as small lesions, potentially appearing in the peripheral areas of the lung airway. These areas pose a significant challenge to access using conventional methods like bronchoscopy.

[006] The techniques discussed herein provide ways to develop suitable diagnostic intervention strategies and/or treatment plans for individuals and assist healthcare

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