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(57) Abstract :

Near the front of the neck, the thyroid gland protects the windpipe. It is shaped like a butterfly, having a small center and wider extremities. It has two long wings that wrap over the side of your throat. The thyroid gland is one of these glands. Glands are distributed throughout the body and manufacture and secrete chemicals that support a variety of bodily processes. Thyroid hormones serve an essential function in the regulation of numerous physiological processes. Inadequate thyroid function can have a range of detrimental effects on your health. Hyperthyroidism is a condition in which the body produces an abnormally high level of thyroid hormone. Hypothyroidism is a condition characterised by insufficient thyroid hormone production. These disorders are so severe that you should contact a physician. The thyroid gland is an essential endocrine organ because it affects numerous physiological processes, such as protein synthesis, energy consumption, and the body's response to other hormones. Due to the fact that the majority of thyroid diseases alter the shape and size of the thyroid over time, segmentation and volume regeneration of the thyroid are essential for diagnosing the problem. The most important thing right now is to determine how and where this disease originated. In numerous healthcare applications, real-time processing enabled by the Internet of Things, cloud computing, and artificial intelligence is employed. The use of machine learning algorithms to make more critical healthcare and biomedical decisions. Time must be factored into a comprehensive Quality of Service framework for thyroid patients. Using a combination of smart health, fog computing, and AI, the goal of this study is to develop a platform capable of rapidly detecting thyroid infections. To identify thyroid patients, it is suggested that a novel ensemble-based classifier be used. The simulation is carried out with Python code, and the thyroid dataset comes from the library at the University of California, Irvine. Encryption and decryption techniques have been offered as a way to increase the framework's security. Response time, bandwidth use, RAM usage, and energy consumption are all employed to evaluate the performance. The classifier is based on its accuracy, precision, specificity, sensitivity, and F1 score. The results indicate that the proposed framework and classifier regularly outperformed the industry standard.

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