ASCERTAINING THE SLEEP APNEA DISORDER IN CHILDREN AGE UNDER 15

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ABSTRACT

The main purpose of this project is to detect the sleep apnea that is respiratory problem while sleeping. However, most minute-by-minute analysis techniques have difficulty detecting accurate event start/end positions. Furthermore, they require hand-engineered feature extraction and selection processes. In this project, we are going to approach for real-time apnea event detection using neural networks. This objective is used to predict the sleeping disorder for children by oxygen rate, sleep/wake status, noice in breathing by using neural network system and to bring about the ahi level in both boy and girl child who are affected by sleep hypnea.

KEY WORDS: sleep apnea, children, encrypt, decrypt, ahi level

I. INTRODUCTION

This project is to analyze the sleep apnea, which occurs when breathing is disrupted during sleep. Untreated apnea can cause hypertension ,stroke or coronary failure. children can also have difficulty thriving socially and academically. In more severe cases, apnea is liable for growth and cognitive delays and heart problems. Untreated sleep apnea can cause high blood pressure, increasing the risk of stroke and heart attack.

The symtoms are snoring, often with pauses, snorts, or gasps. heavy breathing while sleeping. very restless sleep and sleeping in unusual positions. Obstructive apnea (OSA) occurs when a toddler stops breathing during sleep. It has some risk factor they are being over weight , allergies a family history of the condition .These effects may become intractable , leading to depression. it is often diagnosed with an overnight sleep study.Children faces lack of sleep which can have negative effects on children performance in school during curricular activities.

OBJECTIVE

In this paper the objective is to find the sleeping disorder in children in the age under 15. The sleeping disorder in children   may effect in the back throat, nose, in breathing etc …,. they may affect the children   sleeping position may change the will have breathing difficulties and they are curable in the initial stage.

II. RELATED WORKS

Sleep-Disordered Breathing (SDB) is estimated to have a prevalence of 5% in middle-aged population . Sleep apnea, which is a common sleep disorder characterized by the repetitive cessation of breathing during sleep, can result in various diseases, including headaches, hypertension, stroke and cardiac arrest.[1]

Respiratory sounds during inhalation and exhalation could also be noisy when the upper airway space is compromised. Breathing intervals and patterns during sleep also are disturbed. Irregular breathing sounds will be detected when partial or complete breathing cessations occur due to apnea. Breath holding, breathing interruptions may also be detected.[2]

The Apnea Hypopnea Index (AHI) is considered to be the most relevant metric to diagnose the existence and severity of the disorder, indicating the number of apnea events per hour of sleep. This disorder is significantly prevalent with a worldwide estimation of 200 million people [3].

Four percent of adult men and two percent of adult women are victims of this disorder making it more common in males than in women [4]. However, among the apnea patients, 93% of middle-aged women and 82% of middle-aged men with moderate to severe sleep apnea were undiagnosed [5]

A traditional diagnosis method of sleep apnea is polysomnography, which can only be conducted in sleep center with specialized personals, expensive and inconvenient. Some other methods or devices have been developed to alleviate sleep apnea, such as continuous positive airway pressure (CPAP) and intra-oral advancement device and surgery.[6]

Homomorphic encryption systems are capable of performing operations on encrypted data without knowing the secret key. These operations generate a result, which is itself encrypted (i.e. incomprehensible even to cloud provider). The result obtained is the same as if we performed these operations on the raw data . Homomorphic encryption schemes that allow simple computations on encrypted data have been known for a long time.[7]

The Apnea-ECG Database (AED) is one of the most commonly used databases for ECG analysis. A total of 70 nighttime ECG recordings, with one-minute annotations, were provided by Philipps University, Germany and are freely available on the PhysioNet site [8].

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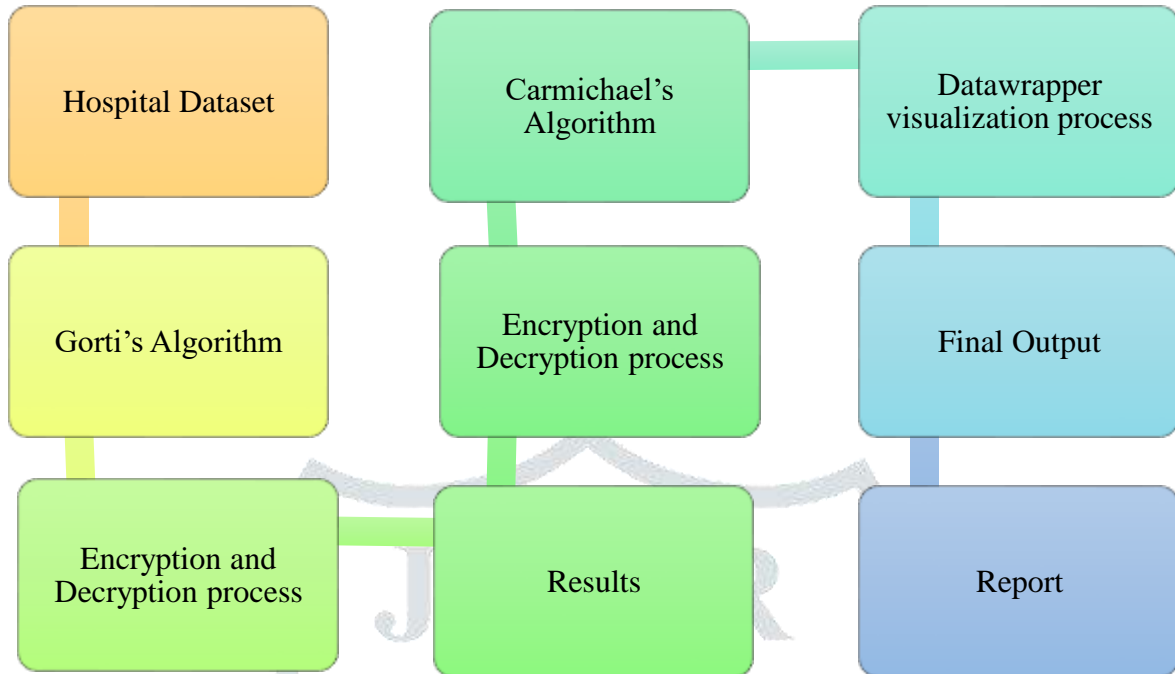
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III. METHODOLOGY

In this project the main algorithm is CARMICHEAL and GORTIS. A Carmichael number will pass a Fermat primality test to each base a comparatively prime to the amount , albeit it's not actually prime. These numbers are named after there inventor Robert Daniel Carmichael. Gortis algorithm is a security algorithm this encrypts the data and finds the result of the same , the time taken for gorti algorithm to encrypt the data and find the result with that encrypted data is taken or noted down to find which among the following two is more effective and saves time.

DATA FLOW DIAGRAM:
The flow chart explains about the DATA FLOW about the project

Hospital Dataset	Carmichael's Algorithm	Datawrapper visualization process
Gorti's Algorithm	Encryption and Decryption process	Final Output
Encryption and Decryption process	Results	Report

IV. RESULT

GORTI:

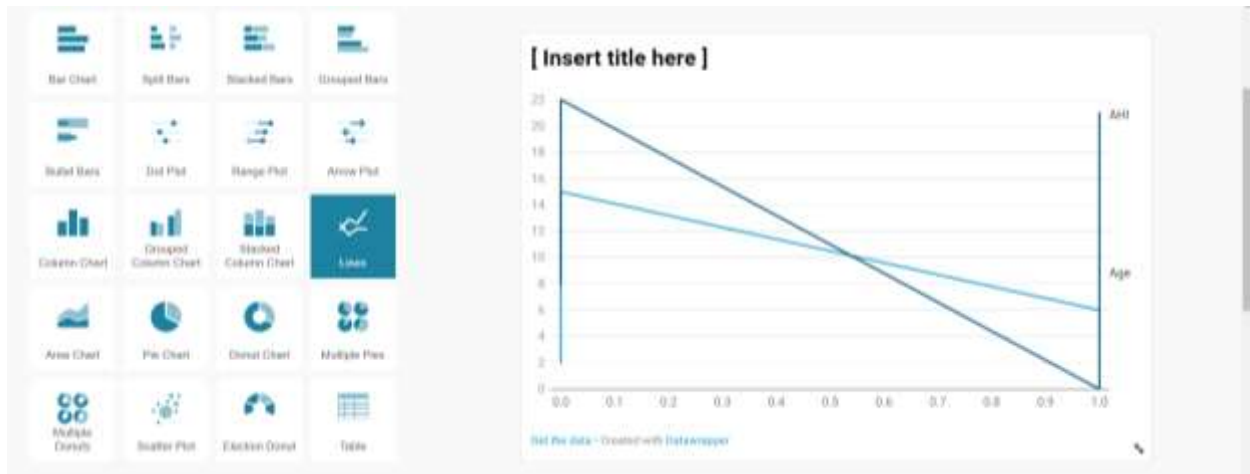|	A	B	C	D	E	F	G	H	I
1	ID	GENDER	Hours_of_	Total_hyp	Total_	ApnAHI	Age	RESULT	EFFECT
2	1	1	5	5	6		0	6 Mild	chronic nasal congestion
3	2	0	8	60	50	17		11 Medium	Stroke
4	3	0	5	150	20	8		2 Mild	chronic nasal congestion
5	4	0	4	50	100	22		15 Medium	Stroke
6	5	1	5	2	2	21		9 Medium	Stroke

FIG:4.1

GORTI VISUALIZATION:

FIG:4.2

This chart explain the sleeping disorder in children in the form of Gorti visualization process. This is lines chart. most of the children in the age of 1 -7 are affected by sleeping dsorder in gorti visualization .

CHARMICHAL:

FIG:4.3

CHARMICHAL VISUALIZATION:

FIG:4.4

This chart explain the sleeping disorder in children in the form of charmichal visualization process. This is bullet bars chart. most of the children under the age of 10 are affected by sleeping dsorder in charmichal visualization.

V. CONCLUSION AND FURTHER WORK

This project explain the shortage of sleep has been related to a rise in all-cause mortality. Likewise, sleep disturbances and sleep disorders may disrupt neuronal pathways and have an impact on neurological diseases. Sleep deprivation studies in normal subjects demonstrate that a scarcity of sleep can cause attention and dealing memory impairment. Moreover, untreated sleep disturbances and sleep disorders like obstructive sleep apnoe (OSA) also can cause cognitive impairment. Poor sleep and sleep disorders may present a big risk factor for the event of dementia.

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