

Data Analytics – Assignment 1

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Domain: Bio-Informatics

Product: MapMyGenome (GenomePatri™)

About our Product:

Genomepatri™ is a revolutionary test that gives you an insight into our genomics predisposition and provides a road map for your wellness.

What they do:

1. Accessing health risks based on gene sequence.
2. Nationality and ancestry tracing.
3. Suggesting lifestyle alterations.
4. Understand individual's response to specific drugs.
5. Health patterns among members of a family.
6. Provided customized drugs and medications.

How they analyze:

1. Assessing health risks based on gene sequence:

Extracting relevant features (Transcript start site & Transcript termination site) from the given genome sequence and **classifying** the sequence as potentially positive or negative to a particular health hazard using previously trained models.

2. Nationality and Ancestry tracing:

Based on **soft classification algorithm** the genome sequence is processed and the probability of the person belonging to a particular nationality is determined (using nearest neighbors approach)

3. Suggesting lifestyle alterations:

Based on previously accessed health hazards and other parameters which constitute the gene makeup and with the guidance of the expert in the field possible lifestyle modifications are suggested. The process can be automated using a **rule based system**.

4. Understanding response to specific drugs and personalized medication:

Specific drugs bind to specific receptors on the gene sequence. The presence or absence of a particular receptor determines the responsiveness to a specific drug. Therefore it can be viewed as a simple **data retrieval system**.

5. Health patterns among members of the family:

Identifying the recessive and dominant genes in a genome sequence helps predict the gene makeup of the offspring.

