Universe
Scientific Publishing

Health economics perspective: Genetic mutation test reports utilize mathematics and computer science to study and analyze cryptographic encryption strategies

Shuai Zhang[1], Yi Qin[2], Renhao Luo[2], Xue Zhang[3]

1. Belarusian State University Mechanics-Mathematics Department, Minsk 220030, Belarus.

2. Saharov Institute of ecology, national university of belarus, Minsk 220030, Belarus.

3. Singapore Management University School of Economics, 178903, Singapore.

Abstract: Health economics is the focus of current research, and genetic testing has become an emerging and universal means of disease surveillance based on the ever-changing perspective of the global basic medicine in the field of cellular genetics. But genes represent the genetic information of the human physiology, and therefore must be handled in a confidential manner. With the use of current computational and codon knowledge structures, the authors propose and report strategies for problem solving in computer medicine based on genetic properties.

Keywords: Genomic Mutations: Codonology;Health Economics; Mathematics; Cross- Domains

1. Background

Genetic variation refers to sudden, heritable variation in the occurrence of genomic DNA molecules. At the molecular level, genetic variation refers to the alteration in the structure of the base pairs or sequences of genes. Genes are quite stable and can precisely reproduce themselves in cell division, but this stability is relative. Under certain conditions, a gene can also be abruptly altered from its original form into another new form of existence, i. e. , at one locus, a new gene emerges suddenly, replacing the original gene, a gene called the mutant gene. As a result, the offspring's appearance suddenly appears as something new that their ancestors never had. The Queen Victorian family in England, for example, did not find a patient with hemophilia before her, but one of her sons had hemophilia and became the first member of her family to have hemophilia. Later, several hemophiliac patients appeared in her grandchildren. Obviously, a mutation in the hemophilia gene was created in her father or mother. The mutant gene was passed on to her, and she was heterozygous, so the phenotype was still normal, but it was passed on to her son through her. The consequences of genetic variation, in addition to the genetic pathogenesis described above, can produce stillbirths, spontaneous abortions, and postnatal deaths, which are termed fatal mutations; they may, of course, have no effect on the human body and result only in normal genetic differences between the human body; and they may even have some beneficial effect on the individual's survival. (1) Pathogenic genetics can be identified by the use of microarray analysis of the human genome. Cancer, diabetes mellitus, etc. are all diseases caused by genetic defects. Researchers in medicine and biology will be able to identify, within seconds, mutations that will eventually lead to cancer, among other things. With a drop of test fluid, doctors can predict the efficacy of the drug to the patient, diagnose the side effects of the drug in the course of treatment, and identify the bacterial, viral, or other microorganisms infecting the patient on the spot. Microarray analysis of genetic genes will result in a 10-year diagnosis of diabetes of more than 50%. In the future, blood is taken from the examiner by a microarray-based diagnostic robot, and instantaneous findings can be visualized on a computer screen. Using genetics, health care will move from a one-size-fits-all era of "general medicine" to one of "customized medicine," based on an individual's genetic genes. (2) Genetic testing is a technique for the detection of DNA by blood, other body fluids, or cells. Genetic testing can diagnose disease or be used to predict disease risk. Diagnosis is the use of genetic testing to detect mutant genes that cause inherited diseases. The most widely used genetic tests are tests for hereditary diseases in the newborn, diagnoses of genetic disorders, and adjuvant diagnoses of certain common diseases. More than 1,000 inherited diseases are currently diagnosed by genetic testing. Tumor gene testing in men

and women predicts whether one is a high-risk population and improves his or her health immunity through good preventive measures. Screening for diseases such as colorectal adenomas, nasopharyngeal cancer, esophageal cancer, leukemia, hepatocellular carcinoma, gastric cancer, colon cancer, prostate cancer, bladder cancer, lung cancer, breast cancer, cervical cancer, dermatitis, etc. (3) The encryption technique consists of two elements: algorithms and key. Algorithms are processes that combine ordinary text (or understandable information) with a string of numbers (keys) to produce incomprehensible cryptons, an algorithm used to encode and decode data. In security secrecy, network communication can be secured through appropriate key encryption techniques and management mechanisms. The cryptosystem of key encryption is divided into symmetry and asymmetry. Accordingly, there are two types of technologies for data encryption: symmetry (private key encryption) and asymmetric encryption (open key encryption). Asymmetric encryption is typically represented by the data encryption standard (DES, Dada Encryption Standard), and asymmetric encryption is typically represented by the RSA (Rivest Shamir Ad1eman) algorithm. The cryptokey and decryption key are the same for symmetry, but not symmetry, which is different from the cryptokey and decryption key, which is public and confidential. Cryptotech is generally divided into two main categories: “symmetry” and “asymmetry”. Symmetry encryption is the use of the same key for encryption and decryption, commonly referred to as “Session Key,” which is now widely used, such as the DES encryption standard used by the United States government, which is typically a “symmetrical” encryption, with its Ssession Key length of 56 Bits. Asymmetric encryption is that encryption and deciphering use a key that is not the same key, usually has two keys, called “keys” and “keys”, which must be paired to use, otherwise the encrypted file cannot be opened. The “key” here refers to the “key” that can be published to the outside world, but the “key of the private” cannot be known only by the holder. This is where its superiority lies, because symmetrical encryption can hardly be used to transfer encrypted files to the other side, any method that can be missed. Non-symmetrical encryption has two keys, and the “key” in which it is public, rather than anyone who knows it, can be decrypted with your own key, thereby safely avoiding the key’s transmission safety concerns. (4) Mathematical algorithms are the core of password encryption, but in ordinary software encryption it seems to be less of a concern, because most of the time the encryption itself is a programming technique. In recent years, however, the role of mathematical algorithms in software encryption appears to have grown as a result of the popularity of sequence number encryption programs.

2. Research Methods

Therefore, we present the following macroscopic requirements (under the cross-sectional conditions of medicine):

It maybe related with it which promote the development of computer network technology, because computer technology cannot be used or involved in many aspects, not because it is not developed as a result of the lack of safety, but because it is explored continuously by technical personnel to make up for safety problems.

Promoting the development of society as a whole, because once computer technology’s vulnerabilities can be bridged by technological means, computer technology has the status and rationale to be applied in areas where it has not been hunted or denied before. The application of new technologies to the development of the times offers a convenient condition for wider and deeper communication among all sectors, not only for the proliferation of computer networks, but also for the rise of social significance, which can be said to have contributed significantly to the development of society as a whole. The display of human wisdom, the ability and responsibility of humans to create the Internet, computer technology, and the ability to make up for the problems that have been fed back, and the creation of another technology that can also have scientific and technological properties and arithmetic, must be acknowledged as the externalization of human wisdom and the great wealth of society as a whole, as individuals assume that data encryption is a manifestation of human intelligence in cyber-security issues.

At the working microscopic level, we propose the following strategy: symmetry encryption, symmetry encryption to decrypt and encode processes using the same key. Safety and effectiveness are particularly critical in the transmission of key signals. During symmetric encryption, decryptation with the same key is performed more quickly and is widely used because the signature is indeterminate and undeniable. DES, 3DES, AES, and DES are all data encryption standards that are

commonly used to encrypt large data and run faster. DES is one of the algorithms for group encryption. Data are available for 64 pairs. Of these, the odd-coup correction was eight, with a password length of 56. The sequence of the original data set was first distended, divided, and finally inserted into the key, and the code was obtained by an iterative process. Whereas 3DES is based on DES, the higher strength is to encrypt a piece of data three times with three keyages. The faster second-generation cryptography algorithm AES is also safer. In gene report monitoring, the current algorithmic engineers should perform a large number of experimental and social procedures. This is more socially desirable.

Asymmetric encryption, in the process of deciphering and encryption, whether the key used is different is the most obvious difference between asymmetric encryption and symmetric encryption. The key and the key are two keys to asymmetric encryption. For encryption, two sets of keyes can be used together. It is known publicly as the “key,” and absolutely confidentially as the “private key”. The advantage of two keyes in the process of deciphering information is that they simply need the receiver to open a “private key” to perform information-efficient secrecy. The “key” has no “key” flexibility, but encryption speed and decryption speed is much faster than the “key”. Thus, in gene reports, different genes are encoded, and more efficient encryption is possible in different coding systems, so model design and algorithmic experiments are needed.

3. Health economics discussion

Individual gains from genomic data may be even more beneficial. These commercial compensations encourage individuals to participate in research and share their information, which in turn leads to greater scientific progress. Some scholars have described the “cyber effect” of respecting health-care data sharing: with more health-care data, the potential value of such data is greater. However, we are currently unable to extract the full value of medical data. As a result of network effects, increased data sharing has actually increased the sharing of information’s value, ultimately generating greater social and economic benefits. But the development of codons is also important, as encryption of genes can trigger the commercialization of shared genetic data and yield truly valuable economic benefits.

4. Conclusion

The growing market for genomic data has led an increasing number of companies to consider the business model of data sharing compensation. This strategy is not only a good model, but also a recipe for profit for consumers. Nevertheless, economic compensation for personal genetic information can also backfire and undermine altruism. Moreover, companies and individuals must also decide how to respect the commercialization of genetic data. Defining the best way to motivate individuals to share genomic data is essential to Big Data and precise health care. Given the growing value of the human genome, it seems logical for individuals to capture their benefits by sharing data. It is therefore important to make up for the cross-over between current genetic testing reports and codonology, and we should begin modeling as a way to anticipate our involvement in specific algorithmic studies, as well as the publication of scientific research papers in subsequent studies.

References

[1] Abdulkareem IH. "Aetio-pathogenesis of breast cancer. " Nigerian medical journal: journal of the Nigeria Medical Association 54. 6 (2013): 371.

[2] Shah NR, Chen HX. "MicroRNAs in pathogenesis of breast cancer: Implications in diagnosis and treatment. " World journal of clinical oncology 5. 2 (2014): 48.

[3] Rahmani F, et al. "Role of regulatory miRNAs of the PI3K/AKT signaling pathway in the pathogenesis of breast cancer. " Gene 737 (2020): 144459.

[4] Bahreyni A, et al. "Role of adenosine signaling in the pathogenesis of breast cancer. " Journal of Cellular Physiology 233. 3 (2018): 1836-1843.