The Dawn of Genetic Storage: Proof-of-Concept, Phase I

Moyer, Ethan

‘Genetic storage’ is the overall phrase that overlays this project, for it displays an important portion of the concept. By using strands of nucleotides, information can be encoded through the use of an algorithmic program that utilizes the understanding of the nucleotides relationships and arrangements. Considering the molecule DNA is more compressed than silicon platters and it has double the amount of values, as well, it provides very efficient means for storing large amounts of data in condensed spaces. ‘The Dawn of Genetic Storage: Proof-of-Concept PHASE I’ contains tests through a proof-of-concept mathematical algorithm that can store strings of information in deoxyribonucleic acid (DNA). The algorithm tested how the basic understandings of nucleotide relationships influence the rarity of the selected strands of DNA. Rarity was measured by testing the frequencies of the selected strands within randomly generated strands of varying sizes and the calculation of permutations of a BASE 4 vs. a BASE 2 counting system. It had been hypothesized prior to the creation of this algorithm that this method would be superior because of its complexity compared to the traditional storage technology. Based on the research and tests supported by the program, the use of genetic material for mass amounts of storage stands above current technology and is viable to use as a BASE 4 counting system for data storage.

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