

1145-VT-935

Lida Ahmadi* (lahmadi@purdue.edu). *Asymptotic Results on the k -th Subword Complexity of Strings.*

The Subword Complexity of a character string refers to the number of distinct substrings of any length that occur in the string. The k -th subword complexity in particular, is the number of distinct substrings of length k in the string. We evaluate the first and the second factorial moment of the k -th Subword Complexity over the binary alphabet. We first take a combinatorial approach to derive a probability generating function in the Bernoulli model for the number of occurrences of patterns in strings of finite length. We then investigate the asymptotic behavior of the expected value and the second factorial moment under a certain assumption for the length of substrings. The Methodology that we use involves complex analysis, analytic poissonization and depoissonization, the Mellin transform, and the saddle point analysis. (Received September 17, 2018)