

- ▶ AMIN FARJUDIAN, *On the Kolmogorov Complexity of Continuous Real Functions*.  
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Kolmogorov complexity was originally defined for finitely representable objects. Later, the definition was extended to real numbers based on the behaviour of the sequence of Kolmogorov complexities of finitely-representable objects—such as rational numbers—used to approximate them.

The idea will be taken further here by extending the definition to functions over real numbers. Any real function can be represented as the limit of a sequence of finitely-representable enclosures, such as polynomials with rational coefficients. The asymptotic behaviour of the sequence of Kolmogorov complexities of the enclosures in such a sequence can be considered as a measure of practical suitability of the sequence as the candidate for representation of that real function.

Based on that definition, we will prove that for any growth rate imaginable, there are real functions whose Kolmogorov complexities have higher growth rates. In fact, using the concept of prevalence, we will prove that ‘almost every’ real function has such a high-growth Kolmogorov complexity.

Moreover, we will present an asymptotic bound on the Kolmogorov complexities of total single-valued computable real functions.