Exploring Aliasing and the Sampling Theorem

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1 Introduction

In signal processing, ...

An analog signal refers to a signal that varies continuously over time. The complexity of analog signal processing, along with their susceptibility to noise and signal degradation over time as well as their limited reproductibility and scalability, makes them inconvenient to work with in practice. Therefore, digital signals are used – signals that vary discretely over time and can take only a finite number of distinct values.

Sampling refers to the process of converting an analog signal into a digital signal. If we let $x(t)$ be a continuous time signal, the sampled signal $x[n]$ is defined as

$$x[n] = x(nT_s)$$

where n represents, and T_s represents.

2 Implementation

3 Discussion

4 Conclusion