

Simple Markov Process Investigation

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Abstract: This paper aims to explain Markov Processes, their strengths and weaknesses, and their real-world applications.

Conception of Markov Processes

A Markov Process can be defined as a model which is used to describe a sequence of possible events, where the probability of the event solely depends on the state of the previous event. Markov processes were first discussed in 1906 by mathematician Andrey Markov. Markov was born in Russia and was described as a bad student in all subjects other than math. He went on to attend and then lecture at Saint Petersburg Imperial University. Markov chains and processes are important in mathematics. The difference between Markov chains and Markov processes is that Markov chains are used when state space is discrete.

Applications of Markov Processes

Both Markov processes and chains have real-world applications of themselves. For example, there are applications of Markov chains in physics, chemistry, music, baseball, and in internet applications. As for Markov processes in the real world, examples include random walks in mathematics, and in text generation software that produces real-life looking sample text. Markov processes can also be used to predict the weather forecast.

Advantages and Disadvantages of Markov Processes

Markov processes and chains are well studied and extremely influential models that are being continuously used. An advantage of Markov processes, like mentioned before, are the real-life applications they can be modeled into. However, with these processes, a disadvantage could be the fact that Markov processes do not use any information for past states, so in predictions it may not always help them to be as accurate as possible. Nevertheless, Markov chains and processes are an efficient tool used in the real world.

References

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