

## Max Mekhanikov - Lecture 7

**#FIRST ATTENDANCE QUESTION: WHO MADE UP THE NAME "MONTE CARLO METHOD"?**

In the late 1940s, Stanislaw Ulam invented the modern version of the Markov Chain Monte Carlo method while he was working on nuclear weapons projects at the Los Alamos National Laboratory.

2) Which of the Bernoulli's was the random variable named after?

In probability and statistics, a Bernoulli process (named after Jacob Bernoulli) is a finite or infinite sequence of binary random variables, so it is a discrete-time stochastic process that takes only two values, canonically 0 and 1.

**#EXTRA CREDIT ATTENDANCE: FIND AN INTERESTING APPLICATION TO BIOLOGY OF GAMBLER'S RUIN**

The Gambler's Ruin problem is essentially a Markov chain where the sequence of wealth amounts that gambler A has at any point in time determines the underlying structure. That is, at any point in time  $n$ , gambler A can have  $i$  wealth, where  $i$  also represents the state of the chain at time  $n$ .