Monte Carlo simulations

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Lecture 13

Coin flipping bets

Imagine the game where someone spin a coin. If the coin fall face up (50/50 chance) you get your bet quadrupled, otherwise your bet is taken by another player.

What fraction of your money pull should you bet to get maximum gain?

The Monty Hall Paradox

Suppose you have 'N' doors, behind one of them there is a prize.

1. make your choice
2. host rules out all other doors without prize behind but one
3. now you face 2 doors (one of your choice and the other)
4. behind one of them the prize is located
5. should you change your mind and pick the other door?

What is more deadly a highly contagious disease with the low mortality rate or a not so contagious disease with the high mortality rate?