

Powers of Matrices and Markov Matrices

$$A = V\Lambda V^{-1}$$

$$A^k = V\Lambda^k V^{-1}$$

Markov matrix is a matrix that the sum of every column is 1, and the element is greater or equal than 0.

One of the eigenvalues of the Markov matrix must be 1.

For the difference process, what happens if Markov multiplies his matrix over and over again, which is what happens in a **Markov process**, This is like -- actually, the whole Google algorithm for page rank is based on a Markov matrix. So that's like a multi-billion-dollar company that's based on the properties of a Markov matrix. And you repeat it and repeat it. That just means that Google is looping through the web, and if it sees a website more often, the ranking goes up. And if it never sees my website, then for that, when is was googling some special subject, it never came to your website and mine, we didn't get ranked. The first term with eigenvalue 1 will be ranked above others.