

markov chains with stationary pdf

1 Markov Chains - Stationary Distributions The stationary distribution of a Markov Chain with transition matrix P is some vector π , such that $P\pi = \pi$. In other words, over the long run, no matter what the starting state was, the proportion of time the chain spends in state j is approximately π_j for all j .

1 Markov Chains - Stationary Distributions

Outline Markov Chains and Stationary Distributions Matt Williamson 1 Lane Department of Computer Science and Electrical Engineering West Virginia University

Markov Chains and Stationary Distributions

is concerned with Markov chains in discrete time, including periodicity and recurrence. For example, a random walk on a lattice of integers returns to the initial position with probability one in one or two dimensions, but in three or more dimensions the

Markov Chains - Statistical Laboratory

Theorem: Every Markov Chain with a finite state space has a unique stationary distribution unless the chain has two or more closed communicating classes. Note: two or more communicating classes but only one closed $\hat{=}$ unique stationary distribution. We know that: $\{\text{limiting distributions}\} \hat{=} \{\text{stationary distributions}\}$.

6 Markov Chains

Markov Chains and Stationary Distributions David Mandel February 4, 2016 A collection of facts to show that any initial distribution will converge to a stationary distribution for irreducible, aperiodic, homogeneous Markov chains with a full set of linearly independent eigenvectors. Definition Let A be an n square matrix.

Markov Chains and Stationary Distributions

then making it stationary is simply a matter of choosing the right initial distribution for X_0 . If the Markov chain is stationary, then we call the common distribution of all the X_n the stationary distribution of the Markov chain. Here $\hat{=}$ how we find a stationary distribution for a Markov chain.

13 Introduction to Stationary Distributions

the Markov chain, though they do define the law conditional on the initial position, that is, given the value of X_1 . In order to specify the unconditional law of the Markov chain we need to specify the initial distribution of the chain, which is the marginal distribution of X_1 .

Basic Markov Chain Theory - Duke University

In general taking t steps in the Markov chain corresponds to the matrix M^t . Definition 1 A distribution π for the Markov chain M is a stationary distribution if $\pi M = \pi$.

Lecture 12: Random walks, Markov chains, and how to

of random walks and Markov chains is given in Table 5.1. A state of a Markov chain is persistent if it has the property that should the state ever be reached, the random process will return to it with probability one.

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