1. Intro

Intro

Stochastic Process

A stochastic process is a family of random varibles $X(t)$ parameterized by an index t belonging to an index set T.

e.g. let $T = \{1, 2, ...\}$
then the collection $\{X(t) : t \in T\}$ is a stochastic process

Index Set

The index set is the set T for which a stochastic process is defined as $\{X(t) : t \in T\}$

If the set T is discrete (countable) then the stochastic process $\{X(t) : t \in T\}$ is called a **discrete time stochastic process**. In such cases we use