

string

di-

grams

any

survey2010.MorecomprehensiveintroductionstoMarkovcategoriescanbefoundinfritzsynthetic2020,choaisintegration2

$X \rightarrow$

$P^X$

$(X, X)$

$\sigma$

$P^X :$

$X \rightarrow$

$[0, 1]$

$P^X(\emptyset) =$

$0$

$P^X(X) =$

$1$

$Y \rightarrow$

$Q^{X|Y}$

$Q^{X|Y} :$

$X \times$

$Y \rightarrow$

$[0, 1]$

$y \mapsto$

$Q^{X|Y}(A|y)$

$B$

$A \in$

$X \rightarrow$

$A \mapsto$

$Q^{X|Y}K(A|y)$

$(X, X)$

$y \in$

$Y$

$P$

$X$

$(P(x))_{x \in X} \in$

$[0, 1]^{|X|}$

$\sum_{x \in X} P(x) =$

$1$

$A \subset$

$X \rightarrow$

$P(A) =$

$\sum_{x \in A} P(x)$

$K :$

$X \times$

$Y \rightarrow$

$(K(y|x))_{x \in X, y \in Y} \in$

$[0, 1]^{|X||Y|}$

$\sum_{y \in Y} K(y|x) =$

$1$

$x \in$

$X$

$B \subset$

$Y$

$K(B|x) =$

$\sum_{y \in B} K(y|x)$

$\{*\}$

$K$

$B$

$L$

$X \times$

$Y \rightarrow$

$M :$

$Y \times$

$Z \rightarrow$

$L :$

$X \times$

$Z \rightarrow$

$K \otimes$

$L$

$W \times$

$X \times$

$Y \times$

$Z$

$(K \otimes$

$L)(y, z|w, x) :=$

$K(y|w)L(z|x)$

$\otimes L :=$

$[baseline =$

$([width = 5em][currentboundinchor_center])(0, 0)node(4) + 1$