

Drawing Figures of Hidden Markov Models in L^AT_EX with PSTricks

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```
\documentclass{article}
\usepackage{pstricks,pst-node,pst-text,pst-3d}
...
\begin{document}
...
\begin{figure}
  \begin{center}
    \vspace{10mm}
    \psset{arrows=->,mnode=circle,linewidth=1pt}
    \begin{psmatrix}
      [name=s0]\mbox{} & [name=s1]$s_1$ & [name=s2]$s_2$ &
      [name=s3]$s_3$ & [name=s4]\mbox{}
      \psset{arrows=->,mnode=circle,linewidth=0.6pt}
      \ncline{s0}{s1}^{\$a_{0,1}$}
      \ncline{s1}{s2}^{\$a_{1,2}$}
      \ncline{s2}{s3}^{\$a_{2,3}$}
      \ncline{s3}{s4}^{\$a_{3,4}$}
      \ncarc[arcangle=-30]{s0}{s2}\Bput{\$a_{0,2}$}
      \ncarc[arcangle=-30]{s1}{s3}\Bput{\$a_{1,3}$}
      \ncarc[arcangle=-30]{s2}{s4}\Bput{\$a_{2,4}$}
      \nccurve[angleA=60,angleB=120,ncurv=10]{s1}{s1}\Bput{\$a_{1,1}$}
      \nccurve[angleA=60,angleB=120,ncurv=10]{s2}{s2}\Bput{\$a_{2,2}$}
      \nccurve[angleA=60,angleB=120,ncurv=10]{s3}{s3}\Bput{\$a_{3,3}$}
    \end{psmatrix}
    \vspace{10mm}
  \end{center}
  \caption{A hidden Markov model.}
  \label{fig:HMM}
\end{figure}

\end{document}
```

```

\begin{figure}
\begin{center}
\vspace{15mm}
\psset{arrows=->,mnode=circle}
\begin{psmatrix}
[name=E1]$E_1$ & & [name=E3]$E_3$ \\[1cm]
& [name=E2]$E_2$
\ncline{E1}{E3}^{\frac{1}{2}}
\ncline{E2}{E1}\Aput{\frac{1}{4}}
\ncarc[arcangle=30]{E2}{E3}\Aput{\frac{1}{4}}
\ncarc[arcangle=30]{E3}{E2}\Aput{1}
\ncurve[angleA=120,angleB=180,ncurv=8]{E1}{E1}\Bput{\frac{1}{2}}
\ncurve[angleA=-60,angleB=-120,ncurv=8]{E2}{E2}\Aput{\frac{1}{2}}
\end{psmatrix}
\vspace{15mm}
\end{center}
\caption{An ergodic hidden Markov model.}
\label{fig:eHMM}
\end{figure}

\end{document}

```

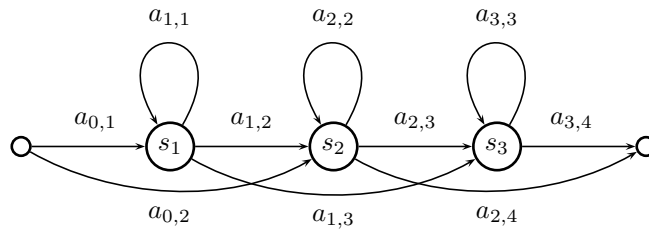


Figure 1: A hidden Markov model.

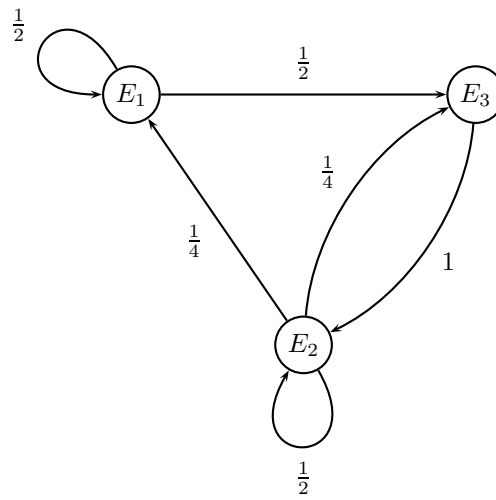


Figure 2: An ergodic hidden Markov model.