Quick Introduction to LaTeX

Writing Papers the Right Way

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LaTeX is and is not..

What is LaTeX

- A sophisticated document preparing system
- Has:
  - Bibliography support
  - Reference tracking
  - Sophisticed structuring capabilities

What LaTeX is Not

- A WYSIWYG kind of word processor
- Does not:
  - Spell-check your document
  - Provide a graphical interface for editing
  - Give you complete control of formatting
Using Partially-Ordered Sequential Rules to Generate More Accurate Sequence Prediction

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Abstract. Predicting the next element(s) of a sequence is a research problem with wide applications such as stock market prediction, consumer product recommendation, and web link recommendation. To address this problem, an effective approach is to mine sequential rules from a set of training sequences to then use these rules to make predictions for new sequences. In this paper, we improve on that approach by proposing to use a new kind of sequential rules named “partially-ordered sequential rules” instead of standard sequential rules. Experiments on large click-stream datasets for webpage recommendation show that using this new type of sequential rules can greatly increase prediction accuracy, while requiring a smaller training set.

Keywords: symbolic sequence prediction, sequential rules, partial order

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Five Reasons to Use LaTeX

- Professional-looking documents
- Latex is much faster
- Edit images anytime
- Focus on the content
- Consistency throughout your content
Setting up Your Machine to Work with LaTeX

Windows

Step 01: Install MiKTeX (miktex.org)

Step 02: Install TeXStudio (texstudio.org)

Alternative

Online LaTeX Editor: Overleaf
\documentclass[a4paper,12pt]{article}

\begin{document}

A sentence of text.

\end{document}
Creating a Title

Type the following directly after the \begin{document} command:

\title{My First Document}
\author{My Name}
\date{\today}
\maketitle
Sections

• \section{...}
• \subsection{...}
• \subsubsection{...}
• \paragraph{...}
• \subparagraph{...}

\section{Introduction}
This is the introduction.

\section{Methods}

\subsection{Stage 1}
The first part of the methods.

\subsection{Stage 2}
The second part of the methods.

\section{Results}
Here are my results.
Labelling

You can label any of the sectioning commands so they can be referred to in other parts of the document.

Label the section with \label{labelname}.

Then type \ref{labelname} or \pageref{labelname}, when you want to refer to the section or page number of the label.

Type \label{sec1} on a new line directly below \subsection{Stage 1}

Type Referring to section \ref{sec1} on page \pageref{sec1} in the Results section.
Table of Contents

Type the following on a new line below `\maketitle`:

```
\pagenumbering{roman}
\tableofcontents
\newpage
\pagenumbering{arabic}
```

If you use sectioning commands it is very easy to generate a table of contents.

Type `\tableofcontents` where you want the table of contents to appear in your document — often directly after the title page.
Font Effects

\textit{words in italics} \hspace{2cm} \textit{words in italics}
\textsl{words slanted} \hspace{2cm} \textsl{words slanted}
\textsc{words in smallcaps} \hspace{2cm} \textsc{WORDS IN SMALLCAPS}
\textbf{words in bold} \hspace{2cm} \textbf{words in bold}
\texttt{words in teletype} \hspace{2cm} \texttt{words in teletype}
\textsf{sans serif words} \hspace{2cm} \textsf{sans serif words}
\texttt{roman words} \hspace{2cm} \texttt{roman words}
\underline{underlined words} \hspace{2cm} \underline{underlined words}
Font Sizes

tiny tiny words
\scriptsize scriptsize words
\footnotesize footnotesize words
\small small words
\normalsize normalsize words
\large large words
\Large Large words
\LARGE LARGE words
\huge huge words
Lists

\begin{enumerate}
\item First thing
\item Second thing
\begin{itemize}
\item A sub-thing
\item Another sub-thing
\end{itemize}
\item Third thing
\end{enumerate}

LATEX supports two types of lists: \texttt{enumerate} produces numbered lists, while \texttt{itemize} is for bulleted lists.

Each list item is defined by \texttt{\item}. Lists can be nested to produce sub-lists.
Comment and Spacing

Comments are created using %. When LATEX encounters a % character while processing a .tex file, it ignores the rest of the line.

Multiple consecutive spaces in LATEX are treated as a single space.

Several empty lines are treated as one empty line.

The main function of an empty line in LATEX is to start a new paragraph.

In general, LATEX ignores blank lines and other empty space in the .tex file.

Two backslashes (\\) can be used to start a new line.
Special Characters

The following symbols are reserved characters which have a special meaning in \LaTeX:\n
\#  \$  \%  ~  \&  \_  \{  \}  ~  \\n
All of these apart from the backslash \ can be inserted as characters in your document by adding a prefix backslash:\n
\backslash\#  \backslash\$  \backslash\%  \backslash\^{}  \&  \backslash\_  \backslash\{  \backslash\}  \backslash\~{}\n
The backslash character \ can not be entered by adding a prefix backslash, \backslash, as this is used for line breaking. Use the \textbackslash{} command instead.
```
\begin{tabular}{|l|l|}
| Apples & Green \ \ 
| Strawberries & Red \ \ 
| Oranges & Orange \ \ 
\end{tabular}
```

<table>
<thead>
<tr>
<th>Apples</th>
<th>Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strawberries</td>
<td>Red</td>
</tr>
<tr>
<td>Oranges</td>
<td>Orange</td>
</tr>
</tbody>
</table>
# Tables – Exercise

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nails</td>
<td>500</td>
<td>0.34</td>
</tr>
<tr>
<td>Wooden boards</td>
<td>100</td>
<td>4.00</td>
</tr>
<tr>
<td>Bricks</td>
<td>240</td>
<td>11.50</td>
</tr>
</tbody>
</table>
Figures

%Add before \begin{document}

\usepackage{graphicx}
...
\begin{figure}[h]
\centering
\includegraphics[width=1\textwidth]{myimage}
\caption{Here is my image}
\label{image-myimage}
\end{figure}
Bibliography

References


http://www-cs-faculty.stanford.edu/~uno/abcde.html
\begin{thebibliography}{9}
\bibitem{latexcompanion}
Michel Goossens, Frank Mittelbach, and Alexander Samarin. \textit{The \LaTeX\ Companion}. Addison-Wesley, Reading, Massachusetts, 1993.

\bibitem{einstein}

\bibitem{knuthwebsite}
Knuth: Computers and Typesetting, \texttt{http://www-cs-faculty.stanford.edu/~uno/abcde.html}
\end{thebibliography}
You can use the `\cite{...}` command to reference to your bib-items in your content.
To start our presentation we need to set the document class to `beamer`.

```latex
\documentclass{beamer}
```

Next we'll select a theme using the `\usetheme` command; for our example we'll use the `Boadilla` theme.

```latex
\usetheme{Boadilla}
```

Now to add slides in we use the `frame` environment.

```latex
\begin{frame}
...
\end{frame}
```