# Jane's LaTeX Tips, Tricks, and Personal Preferences

Jane Hoffswell | June 7, 2022

# 1. Get started early!

1. Get started early!

*and*

2. Write as you go!

# 3. Include well-formatted citations from the beginning

Same conference, different formats…

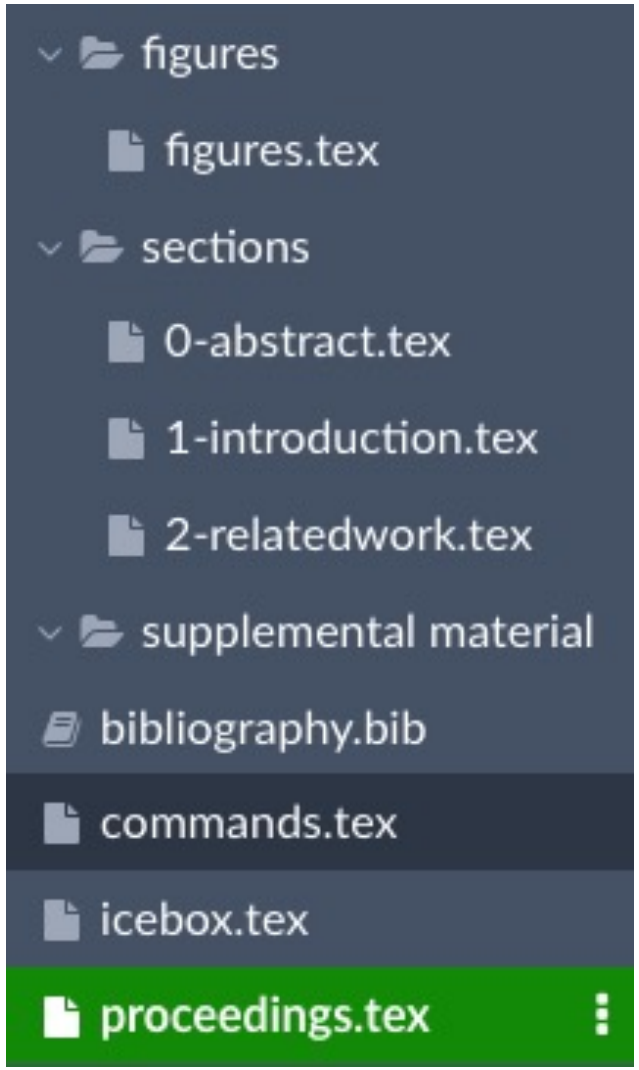
```
@inproceedings{hoffswell2020techniques,
  title={Techniques for flexible responsive visualization design},
  author={Hoffswell, Jane and Li, Wilmot and Liu, Zhicheng},
  booktitle={Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems},
  pages={1--13},
  year={2020}
}
```

```
@inproceedings{kim2022cicero,
  title={Cicero: A declarative grammar for responsive visualization},
  author={Kim, Hyeok and Rossi, Ryan and Du, Fan and Koh, Eunyee and Guo, Shunan and Hullman, Jessica and Hoffswell, Jane},
  booktitle={CHI Conference on Human Factors in Computing Systems},
  pages={1--15},
  year={2022}
}
```

Tips for a well-formed citation:

- Standardize reference label format
- Use consistent names for conferences
- Given page constraints, remove unnecessary details
- Add the DOI link and/or number

# 4. Keep organized with separate files and folder structure




```
1  \documentclass{article}
2  \usepackage[utf8]{inputenc}
3
4  \title{sample-paper}
5
6  \input{commands}        % File that specifies custom LaTeX commands
7  \input{figures/figures} % New commands specifying all paper figures
8
9  \begin{document}
10
11 \maketitle
12
13 \input{sections/1-introduction} % Introduction
14 \input{sections/2-relatedwork}  % Related work
15
16 \input{icebox}
17
18 \end{document}
19
```

**Sample Overleaf Document**

# 5. Archive old content to remove (but save, just in case) in icebox.tex

Related work section you don't need anymore?

Figure that is too big for the final version?

Intro paragraph you really like, but doesn't fit the story?

**Add them to the icebox!**

# 6. Use new commands in figures.tex to make figure placement easier

```
%!TEX root = proceedings.tex

%%
%% NOTE: For each figure in the paper, create a \newcommand here that specifies the figure and then call the command from the
%%       desired place in the paper. This structure facilitates editing by putting all of the figure descriptions in one place.
%%

\newcommand{\figureSample}{
\begin{figure}[t]
    \centering
    \includegraphics[width=0.5\textwidth]{figures/sample.pdf}
    \caption{}
    \Description{}
    \label{fig:sample}
\end{figure}
}

```

```
Now, to add a file to the paper, simply refer to the corresponding new command:

\figureSample
```

# 7. Keep all custom commands in one place in commands.tex

New commands are useful for maintaining consistency or combatting uncertainty.

```
%% Note: Some commands for spacing Latin letters/abbreviations
\newcommand{\ie}{{i.e.,}\xspace}
\newcommand{\eg}{{e.g.,}\xspace}
\newcommand{\etal}{{et~al\xperiod}\xspace}
\newcommand{\aka}{{a.k.a.}\xspace}
\newcommand{\etc}{{etc\xperiod}\xspace}
```

```
%% Note: Commands for custom styling of bold, inline paragraph headings
\newcommand{\parHeading}[1]{\vspace{8px}\noindent{\textbf{#1}}}
```

```
%% Note: New command for mentioning the system name
\newcommand{\sys}{StillUndecided}
```

```
%% Note: Commands for custom styling of participant quotes
\newcommand{\myquote}[1]{\emph{``#1''}}                    % Italic text in quotation marks
\newcommand{\myquoteparticipant}[2]{\emph{``#1''}~(#2)}    % Italic text in quotation marks AND P# with non-breaking space
\newcommand{\mylongquote}[1]{\begin{quote}\emph{#1}\end{quote}} % Block quote in italics, no quotation marks or P#
```

```
\definecolor{lightgreen}{RGB}{121,210,121}
\newcommandx{\jane}[2][1=]
    {\setulcolor{lightgreen}{\ul{#1}} \textcolor{lightgreen}   %% Usage: \jane[(optionally) underline text]{With a comment.}
    {[\textbf{Jane:} #2]}}
```

```
%% Note: Relevant packages added for the contents of this file
%% Please include a comment describing the purpose of each new package
\usepackage{xargs}      % Used for new commands with optional arguments
\usepackage{soul}       % Used for custom comments
\usepackage{color}      % Used for custom colors in comments
\usepackage{xspace}     % Used for abbreviation spacing
\usepackage{xpunctuate} % Used for abbreviation spacing
```

8. Always add a comment when including new packages to explain **WHY**

# And now… a (growing) list of other tips and tricks for consideration

- Include each separate sentence on a new line (*line breaks makes it easier to jump between text/doc*)
- Clearly label sections that are ready for review (or not) – *one option is my "status badges"*

```
%% Note: Section status badges to label which sections are ready (or not) for feedback
\newcommand{\badge}[2]{\colorbox{#1}{\textcolor{white}{\textsc{#2}}}}
\newcommand{\headerBadge}[2]{
  \vspace{-15px}                    % Move badge into header
  \hspace*{\fill}                   % Align badge right
  \badge{#1}{#2}                    % Create badge
  \vspace{4px}\linebreak\noindent % Spacing for first paragraph
}
\newcommand{\complete}{\headerBadge{lightpurple}{complete}}
\newcommand{\feedbackProvided}{\headerBadge{lightgreen}{feedback provided}}
\newcommand{\readyForFeedback}{\headerBadge{lightorange}{ready for feedback}}
\newcommand{\underRevision}{\headerBadge{lightred}{actively under revision}}
\newcommand{\incomplete}{\headerBadge{red}{missing or incomplete}}
```

# Bonus:

Jane's Paper Polishing Checklist

- ❑ Citations should have a non-breaking space ("~")
- ❑ Participant numbers should have a non-breaking space
- ❑ Figure/Section references should have a non-breaking space
- ❑ Every figure should be referenced in the text
- ❑ There should be paragraph text under every section heading
- ❑ **Remove typographic "widows" and "orphans"**
- ❑ **Figure captions should describe the image and takeaways**
- ❑ **Check for and remove dangling "this"**

and abstracting visualizations of the data flow graph to be useful to developers.

I'd count this too

The current Vega workflow consists of first writing a specification, and then handing it off to the Vega library to parse and render the final visualization. This deferred evaluation creates a lag between authoring a visualization and debugging the resultant output, making it hard to pinpoint the source of errors. A visualization of the data flow graph can tighten this feedback loop, enabling a more iterative design process. Brushing and linking allows developers to jointly inspect the specification, visualization and data flow graph, but challenges such as the behavior of interactive visualizations and hierarchical specifications makes identifying correlated elements difficult. Additional techniques, such as transient overlaid guides [SH14], will be necessary to account for these complications.

widow

## 3. Conclusion

The proposed techniques can help bridge the gulf of evaluation that is introduced by decoupling specification and execution. By presenting and augmenting the data flow graph, developers can jointly inspect the specification, visualization, data flow graph, and streaming data to iteratively develop visualizations. In general, visual representations of program states can provide developers with the context necessary to better interpret and interact with their code. Surfacing the program state allows developers to adjust their mental model alongside the program execution and can therefore enable more effective debugging practices by limiting this separation.

orphan

# Two benefits of removing widows and orphans:

1. Makes text clearer and more concise by removing unnecessary words
2. Saves a noticeable amount of space to provide more room for content

Captions should be standalone and just as informative as the text.

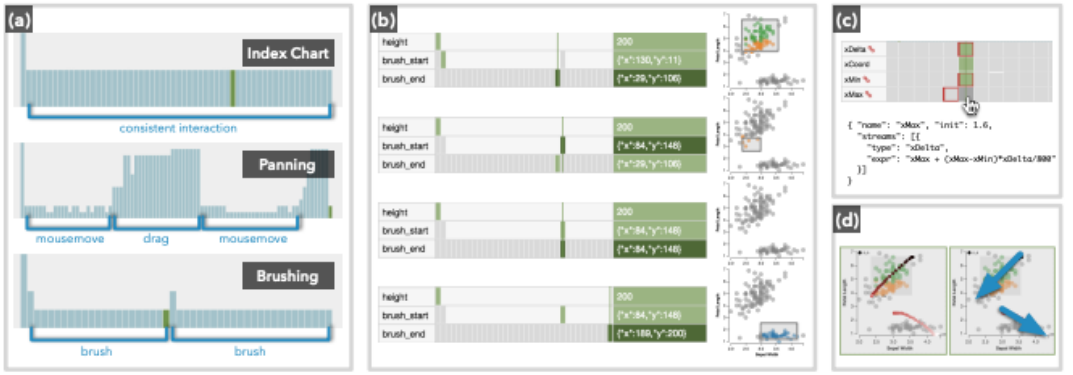



**Figure 3:** *The (a) overview, (b) timeline, and (c) signal annotations after performing interactions.*

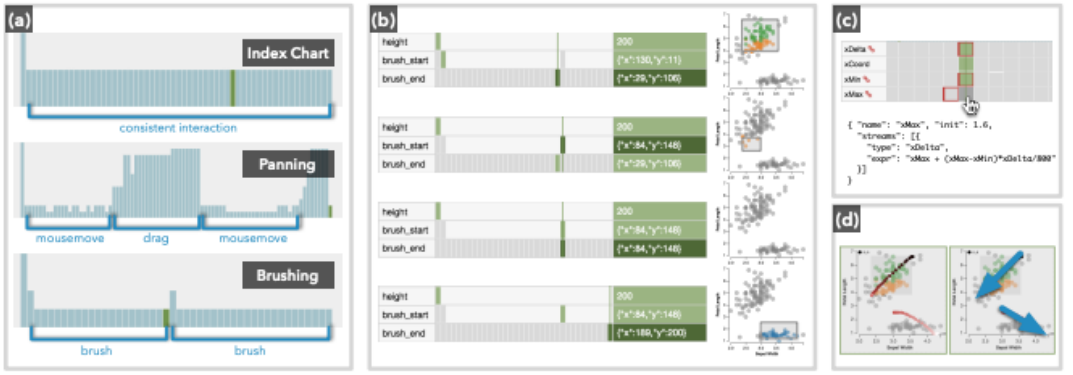



**Figure 3:** *The overview, timeline, and signal annotations after performing interactions. (a) The overview provides insight into different interaction patterns. (b) Stepping within a pulse allows users to see intermediate states of an interaction. The second scatterplot shows a brush representing the* new `brush_start` *and* old `brush_end`*. (c) Dependencies are shown as red outlines on hover. (d) Signal annotations overlay the visualization, with fill color encoding temporality: from darkest (past), through red (current), to lightest (future).*

simplification?

algorithm?

finding?

system?

technique?

"This _____ is possible because signals express the bulk of an interaction technique, abstracting away the particular input events that trigger interactive behavior."

fill in the blank

visualization?

approach?

model?

result?

# Sometimes, it is impossible to make everything work…

so try your best and be open to compromises.