Tips for paper writing in Latex

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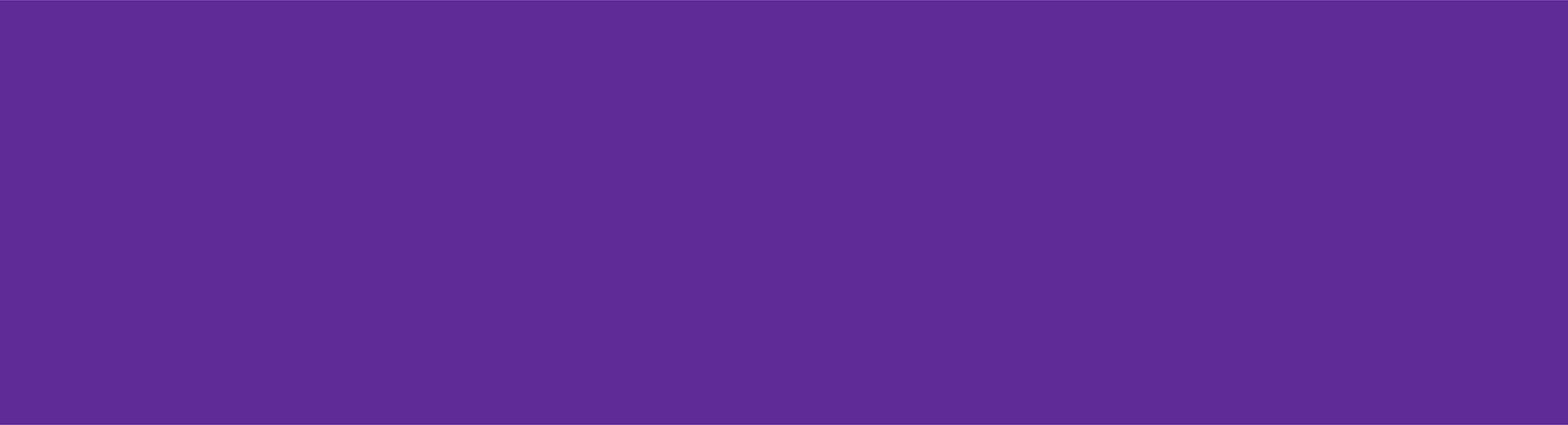
What is the problem with this?

However, as far as we know, there are no symbolic execution techniques that are suitable for text inputs generation. Some of them are designed to reach target location, while ...Just as we mentioned above, Java symbolic execution tools(...) cannot be used to testing such kind of android apps.

Be Clear and Concise

Shorter is better. Don't use extra phrases that does nothing:

- "in order to" -> "to"
- "Utilize"->"use"
- "incredibly important"-> "important"
- **Do not** use words like "clearly", "easily", "obviously", and "trivially", as in "Obviously, this Taylor series sums to π." -> "This Tayloor series sums to π."

Too informal:

- "Let's see an example program"-> Consider an example program

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One observation is that most android libraries are GUI-related or resource-access related.
The path constraints inside such libraries will not have effect on the path exploration of app code.
Therefore, a concolic execution framework based on mixed execution is proposed.

Use Active Voice

ﺏ Use short, declarative, **active** sentences. Do not use **PASSIVE VOICE**.

  Evolutionary algorithm is used to optimize … -> We use evolutionary algorithm to optimize

  The results is showed in Table~\ref{...}. -> Table~\ref{} shows that ...

  The final values is computed using ... -> Our synthesizer computes the ...

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Data and links

- Include the precise number, versions, commit numbers

  - The dataset has a few attributes. -> The dataset has 22 attributes

  - [In Implementation Section:] We use Evosuite. ->We use Evosuite 1.0.6

- Include the links for bug reports,
  - Important for credibility and reproducibility.
  - Two alternatives:
   - Developers mentioned about the … in a bug report~\footnote{http://..}
    - Developers mentioned about the … in a bug report~\cite{...}

Tables

- If you need a fast way to convert Excel spreadsheet to latex table, go to
  https://www.tablesgenerator.com/
- **Colors:** Choose colors that are distinguishable when printed in greyscale
  - Go to http://colorbrewer2.org/ and choose "colorblind safe" and "print friendly" to find color combinations that work.
- Right justify columns of numbers
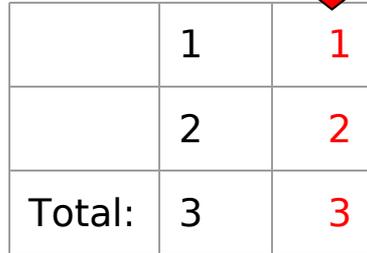
	1	1
	2	2
Total:	3	3

- Use **macro** to represent **last rows of the table**
  - \newcommand{\totalNumber}{{3}

Numbers

- **Rule:** Write out in letters all positive numbers less than or equal to 10.
    - Example: We use four machines with ....
    - Example: We use 11 machines with …
- Use **macro** to represent **important numbers** (Example, number of bugs found, number of bugs confirmed, number of subjects evaluated) to ensure consistency
    - \newcommand{\numSubject}{14}
    - We evaluate our approach on \numSubject\ to….
    - Among the \numSubject, …
- Use consistent units in Table

Total Time
20s
2 mins

Total Time (seconds)
20
120

Latex common mistakes

- "word"->``word''
- The label for all tables, figures, and listings should **not** be entered manually. Each references should be Listing~\ref{...} instead of listing 1, 2, ...
  - Listing/ Table/Figure should be capitalized
  - Include a non breaking space (~) between the words Figure/Section/etc and the \ref. (e.g., Listing~\ref{...})
- Dash
  - Em dash is 3 dashes

```
Hyphen: daughter-in-law, X-rated\\
En dash: pages 13--67\\
Em dash: yes---or no? \\
Minus sign: $0$, $1$ and $-1$
```

daughter-in-law, X-rated
pages 13–67
yes—or no?
0, 1 and −1

The names for these dashes are: '-'(-) hyphen , '--'(–) en-dash , '---'(—) em-dash and '−'(−) minus sign. They have different purposes:

Input	Output	Purpose
-	-	inter-word
--	–	page range, 1–10
---	—	punctuation dash—like this
$-$	−	minus sign

Explain the reason behind choices of subjects/tools

Compare some existing open-source tools if available

ب   We use tool X .... -> Although there several open-source tools for …~\cite{..,..}, we use tool X because … show promising results in prior works~\cite{...}

Otherwise

ب   We use tool X .... -> We use tool X because … is the only available open-source tool for ...

Explain the negative results

- **Bad:** We generate ... out of .. incorrect patches.
- **Better:** We generate ... out of .. incorrect patches. For two of the incorrect patches, we manually analyze the reasons behind … and ...

Citations and abbreviations

- Do not use citations as nouns.
    - Example: "In [14], Hazelwood et al. describe facts." Yes: "Hazelwood et al. [14] describe facts."
    - Put "." in correct place: et al.
- Use abbreviation in the middle of sentence. (i.e., means "in other words," e.g., "for example,")
    - Always put a comma after i.e. and e.g.
        - Example: Several techniques exists for ... (e.g., genetic algorithm)
        - Example: Our pet, Squiggly (i.e., the snail we brought home after the lab experiments were finished)
- Use numbering for explanation that involves >= 2 parts.
    - We choose to use …. Because (1) it is the most popular … with … downloads per year, (2) it contains more …, (3) ...

Naming

- Use correct name for libraries/tools used:
  - e.g., Openjpeg -> OpenJPEG
- Use macro for representing the name of your tool/approach
  - \newcommand{\tool}{\emph{relifix}}
- For the definition of a specific term, use \emph{}
  - \emph{flaky tests} (tests that has non-deterministic outcome)
- Do not cite a definition but used it wrongly.
  - \emph{flaky tests} (tests that fails) [1] but in [1], the definition is different

Other common phrases

- [Usually in contribution part of introduction:] To the best of our knowledge, we are the first …
- Given tool …, our approach generates … as output
- All experiments were performed on a machine with .. processor and … memory
- Usually in Related works section:
    - Our approach is orthogonal (independent) to ….
    - Our approach is complementary (combining in such a way as to enhance or emphasize the qualities of each other or another.) to …

Other tools that I used

Spell checker

- `aspell -t -c file.tex` or `ispell -t file.tex` (The `-t` option is to tell the spell checker that the file is in TeX or LaTeX format so that it will ignore macros.)

Grammar checker

- Vim: https://github.com/dpelle/vim-LanguageTool

References

- https://clairelegoues.com/2016/08/23/things-i-keep-repeating-about-writing/
- https://homes.cs.washington.edu/~mernst/advice/write-technical-paper.html