IPOL Style Guide and Example

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Abstract

The abstract should contain about 100 to 150 words, and should be identical to the abstract text submitted electronically. An abstract must be able to stand alone, independent of the paper. Written in plain text, it cannot contain citations to the papers references or equations or footnotes and should not, if possible, include special characters like math notations or greek letters, or hyperlinks. The abstract must be a single paragraph; multiple parts can be split with a single line break.

Source Code

The source code section briefly explains what the source code published with the article contains, all in a single paragraph. For example: The reviewed source code and documentation for this algorithm are available from the web page of this article[1]. Compilation and usage instruction are included in the `README.txt` file of the archive.

Supplementary Material

The supplementary files section provides explanations about other files published with the article, all in a single paragraph. Mention clearly if they are reviewed or not. For example: A reference dataset, to be used for further comparisons, is provided with the article and peer-reviewed. A Matlab interface (not reviewed) is also available for convenience.

Keywords: first, second, third, fourth

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[1]http://www.ipol.im/

1   Introduction

The submission process is detailed in the IPOL Author Manual[2]. Prepare IPOL articles with the LaTeX class available from http://www.ipol.im/. Just copy `ipol.cls` and the logo files (`ipol_logo.pdf` and `ipol_logo.eps`, plus `siims_logo.eps` or `siims_logo.jpg` for IPOL+SIIMS articles) in the directory containing your manuscript source. Then use this class like the standard "article" class of LaTeX, with special commands explained hereafter. You can start by editing the source of this style guide. Submit your manuscript for review as a PDF file following this style guide. For review, only the PDF file is needed.

After review and during the editing process, you must provide the complete source as a single archive file (`zip` or `tar/gzip`), including the LaTeX source (`.tex`), BibTeX references (`.bib`), LaTeX class (`.cls`) and style (`.sty`) and all the graphics files (`.png`, `.jpg`, and `.pdf`). Remove unused files (including backup and temporary versions and dotfiles). Please rename your LaTeX source to `article.tex`. Use plain ASCII text, and TeX commands for accents (`J\'er\^ome`). This source will be used to produce the final published PDF version, and must compile with pdfLaTeX.

1.1   Title and Authors

Commands `\ipolSetTitle`, `\ipolSetAuthors` and `\ipolSetAffiliations`, from the IPOL class, set information needed to generate the article header and metadata. Use these commands in the preamble of the LaTeX file, between `\documentclass{ipol}` and `\begin{document}`.

Do not use special characters (math symbols, superscripts, greek letters . . .) in the title if possible. Use headline-style capitalization for the article title: capitalize the first letter of the first and last words of the title and subtitle and all other words, except for articles, coordinating, the words "to" and "as", prepositions (unless they are emphasized or used as adverbs, adjectives, or conjunctions).

Multiple authors and affiliations are indicated using the command `\ipolAuthorMark`. Separate authors by commas, never by "and" or "&". Use institutional email addresses with the affiliations. Postal addresses are not necessary.

1.2   Abstract, Code, Supplementary Material and Keywords

Three environments generate specific sections at the beginning of IPOL articles: abstract (`ipolAbstract`), Source Code info (`ipolCode`), and Supplementary Material info (`ipolSupp`). These environment work like the classic LaTeX `abstract` environment and should be used after the `\begin{document}` and before the main text of the article. It is important to use `ipolAbstract` for the abstract and not the LaTeX "abstract". The abstract must be a single paragraph.

The command `\ipolKeywords` sets the keywords of the article. This command is to be used after the abstract, source code and supplementary material sections but before the beginning of the article itself.

1.3   Links and DOI

To produce a *link* in the PDF to the article web page, use the LaTeX variable `\ipolLink`, with the commands `\url{}` or `\href{}{}`. During the submission and review, you can configure the link with `\ipolPreprintLink`. If you do not set the preprint link, the IPOL journal address will be used instead. After publication, `\ipolLink` will be set to the permanent DOI address attributed to the article.

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[2]https://tools.ipol.im/wiki/ref/author_manual/

Always use `\ipolLink` for any online reference to the preprint or article, including references to the source code, supplementary materials and demo. Do not append a filename to this link address.

1.4 Paper content

Typically, The manuscript of an IPOL article submitted for peer-review should include an introduction, a detailed explanation of the algorithm (it could include some theoretical background, pseudo-code and/or block diagram, a complexity analysis, and an explanation of the parameter values), commented examples of the results and references to related publications. This content can be adapted when the article is not about an algorithm (like dataset articles).

2 Writing Style

The Turabian manual [6] is the recommended reference for IPOL writing style.

2.1 Language

Use correct American English for your articles (color, neighbor, . . .). When in doubt, refer to the dictionaries and spell-checkers (but they won't include technical terms like "denoising").

Do not use sentences like "Try the demo! Try the code!"; this is an academic article, not a commercial.

You can use Merriam-Webster Collegiate Dictionary [3] for spelling and general writing guidelines from Strunk and White [5] and Williams [7].

2.2 Typography

Be careful with the subtle details of TeX spacing and punctuation. For correct spacing and line breaking, do not insert spaces before typographic signs (:;,.). *Do* insert non-breaking spaces (~) before references and citations (`\ref{}`, `\eqref{}`, and `\cite{}`). Add `\ ` after dots not ending a sentence and `\@` before dots ending a sentence after a capital letter (`the PSNR\@.`). Add spaces outside of a parenthesis but not inside.

Sentences start with a capital letter and end with a dot, even in a footnote. Use long dashes (`--`) between names (`Chan--Vese`), use `\ldots{}` (instead of `...`). You can check some (but not all) of these typography rules with the program `lacheck`.

Capitalize brand names ("Intel Xeon") but do not insert the (R) or TM symbols. Write file names in monospace font (`\verb|program.c|`). Write foreign words in italic, but not common terms found in a dictionary (like "de facto" or "vis-à-vis"). Do not italicize latin abbreviations ("i.e.", "et al.", . . .). Avoid unnecessary abbreviations ("Fig.", "Eqn.") [6, sec. 26.3.2].

Use headline-style capitalization for the article title and (sub)section titles, to distinguish them clearly from surrounding text [6, p. 314]. Capitalize the first letter of the first and last words of the title and subtitle and all other words, except as follows:

- Do not capitalize articles ("a", "an", "the"), coordinating conjunctions ("and", "but", "or", "nor", "for", "so", "yet"), or the words "to" and "as" unless such a word is the first or last word in the title or subtitle.

- Do not capitalize prepositions ("of", "in", "at", "above", "under", and so forth) unless they are emphasized ("through" in "A River Runs Through It") or used as adverbs ("up" in "Look Up"), adjectives ("on" in "The On Button"), or conjunctions ("before" in "Look Before You Leap").

- Do not capitalize the second part (or subsequent parts) of an hyphenated compound unless it is a proper noun or adjective.

- Do not capitalize parts of proper nouns that are normally in lowercase ("van" in "Ludwig van Beethoven").

When math or greek symbols are used in (sub)section titles or in the article title (avoid if possible), provide a full-text alternative with the `\texorpdftext{}{}` command. For example, `\texorpdftext{$\alpha$}{alpha}` or `\texorpdftext{$TV-L^1$}{TV-L1}`.

3 Layout

Do not modify the layout set by the LaTeXclass: paper size (A4 paper), margins, font type, size, or color.

Do not insert manual page breaks (`\\`, `\newline`) or vertical space (`\vspace{1cm}`). The document layout should still be correct with a different page size or font size. Do not use `\include{}` commands to split your article into different files, because they insert a page break; use `\input{}` instead. Do no add newlines at the end of paragraphs.

Do not use absolute dimensions (`cm`, `mm`) to resize an image. Instead, express their width and height relatively to the dimensions of a text line: `width=0.45\linewidth`[3], `height=5em`. Try to use same sizes in the whole article, for example `0.45\linewidth` for images by pairs and `0.3\linewidth` for groups of three.

Do not embed rich media such as video, 3D, or animated images, into the article. These files can be published as reviewed supplementary materials.

Use `\appendix` before a `\section{}` for appendices.

Avoid inline tables and images when they are large, use floating environments, with `!htbp` positioning options (`\begin{table}[!htbp]`, `\begin{figure}[!htbp]`). Every floating figure and table must have a caption and must also be referenced in the text, independently of their legend, and redundancy of both texts is allowed.

Tables and figures must always fit inside the document margins. Very large tables can be reduced using a `\small` font size, or displayed vertically using the `rotate` LaTeX package.

Figures, tables, algorithms, sections, etc. are cited without abbreviations and capitalized: "results are displayed in Figure 3(a)", "as discussed in Section 1 . . . ", "the method is described in Algorithm 2", "RMSE values are shown in Table 4".

3.1 Tables

Avoid internal grids (horizontal and vertical lines) in tables, as seen on Table 1. Generally lines should be only used to separate different parts of a table, to direct the reader's eye in one direction, or to organize an unusually complex table[4].

3.2 Lists

Do not manually insert bold or underlined text to emulate lists or subtitles. Use the natural LaTeX structures for this purpose: `itemize`, `description`, `paragraph`.

first This is the first item in a `description` environment.

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[3]The `linewidth` variable is more robust than `textwidth` or `columnwidth`.
[4]See the LaTeX booktabs documentation[5] for guidelines on what constitutes a "good" table.

image	$\sigma = 1$	$\sigma = 2$	$\sigma = 5$
bag	0.74	0.62	0.47
building1	0.34	0.24	0.55
computer	0.35	0.36	0.55
dice	0.12	0.12	0.17
flowers2	0.15	0.13	0.15
hose	0.87	0.62	0.49
$E_\sigma^{(2)}$	0.58	0.52	0.51

Table 1: This is a example of light table, with only a few horizontal lines.

second This is the second item, with a long sentence to show how lines wrap. You can even use paragraphs in a description environment, or math equations.

third This is the third item.

3.3 Remarks and Definitions

Use \newtheorem{} for remarks and definitions.

Remark. *This is a remark.*

Definition 1. *This is a definition.*

3.4 Algorithms

Use the `algorithm2e` environment for algorithms. An example is provided hereafter as Algorithm 1, with definitions (input, ourput, comments) available from the LaTeXsource of this document.

Algorithm 1: Intensity transformation (abridged)

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input : T, α, original image
output: corrected image
foreach *pixel position* (i, j) **do**
$\quad\lfloor\ N_4(i, j) = \{(i, j), (i + 1, j), (i - 1, j), (i, j + 1), (i, j - 1)\}$ *Compute the neighborhood.*
$\Omega_d = \{(i, j) \in R : \quad u(k, l) \leq T, (k, l) \in N_4(i, j)\}$ *Compute the discrete dark region.*

3.4.1 Math

Tall math formula (with sums, fractions, etc.) must be out of the text flow (with double dollars `$$...$$`). Do not insert empty lines between text and math if they are in the same paragraph; empty lines may result in misplaced page breaks and wrong indentation.

4 Images

Final PDF files for IPOL articles are prepared with pdfLaTeX, so you must use PNG or JPEG files for bitmap images and PDF files for vector graphics.

JPEG is for natural images obtained from digital photography, when visually identical data is sufficient. PNG is for artificial images and when exact pixel values are important. Use the highest resolution available for these images; final PDF files will be filtered and downsampled provide a version at screen resolution, together with the full-resolution data. If your images are already in JPEG or PNG, do not change their file format.

If your bitmap images are not in JPEG or PNG format, convert them into these file formats with the ImageMagick `convert` tool for example.

Remove unnecessary white margins from image files[6]. You can also optimize the size of PNG and JPEG images without quality loss with the `minipng.sh` and `minijpeg.sh` scripts available from the Manuscript Guidelines[7].

Please store all the images used by your article in a subfolder. Do not include images not included in the article to be published.

4.1 Vector Graphics

Vector graphics are more precise, have virtually unlimited resolution and weight less in the PDF file; use them for figures and curves, like the example in Figure 1.
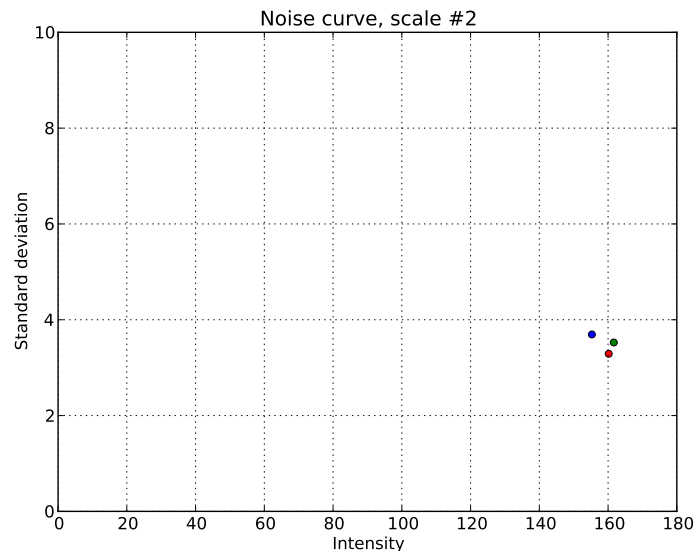

Figure 1: This is an example of vector graphics. This figure is precise and well rendered at any zoom level on screens and printed with high resolution.

You can produce vector PDF output with `gnuplot` with proper options (`set terminal pdf`) and vector SVG figures the *Inkscape* program for example, and then convert them to PDF, or direct PDF output with the PGF/TikZ LaTeX packages[8]. You can also convert EPS vector images files to PDF files with the `epstopdf` tool. Simply converting a PNG file to PDF *does not* create a vector graphic file.

4.2 Copyright

Authors must warrant to be the authors of every part of the final article including the images, or must include permission of the copyright holder. If you use images you do not own, you must include

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[6]You can use `convert in.png -trim out.png` for PNG and JPEG files and `pdfcrop in.pdf out.pdf`.
[7]http://www.ipol.im/
[8]TikZ/PGF - Graphic systems for TeX, http://pgf.sourceforge.net/

their authors and permissions to be used in the article in a special section at the end of the article. We want other researchers to be able to reuse these images for comparisons in other articles; try to use only images under a permissive license like "CC-BY" or "CC0".

5 References

We recommend the use of BibTeX with the SIAM bibliographic style[9] for the automatic formatting of the references. Reference presentation rules are complex, see *The Chicago Manual of Style* for details[10].

References must include, at least: author(s), title, journal/series/editor, volume, pages, year, and DOI/ISBN. Do not use shortened journal titles.

Journal articles references must mention the DOI if it exists, presented as "`https://doi.org/AA.BBBB/CCCCCCC`" at the end of the reference block[11]. In BibTeX files, add the DOI in a `note` field: `note = {\url{https://doi.org/10.5201/ipol.2013.90}}`.

DOIs provides reliable and permanent links to the officially published version of articles, and they are used by reference management tools and indexing services to automatically collect reference citations from a document. You can find DOIs for most of the published articles using the Crossref Guest Query tool[12].

Book references must mention the ISBN, presented as "ISBN XXXXXXXXXX" at the end of the reference block. You can find ISBNs for every published book in ISBNdb[13] or the WorldCat catalog[14].

Grammatically, reference numbers may be treated like footnotes or like nouns: "*Facchinei and Lucidi [19] proved rate of convergence results; For recent convergence results, see [19]; In [19] results on the rate of convergence; as shown by Faccinei et Lucidi [19]*".

Do not insert reference in the abstract. Instead, replace citations with the reference itself, in brackets and formatted as follows:

Journal articles: [P. T. Smith, K. Wang and J. W. Jones, SIAM Journal of Numerical Analysis, 26 (1989), pp. 600623]

Books: [R. Doe and E. Prince, Principles of Physics, K. Lev, ed., Birkhuser, Basel, 1997]

If you refer by name to the authors of a cited work, you dont need to repeat the names within the reference: "*In this paper we give an analysis of the algorithm by Smith, Prince, and Doe [SIAM Journal on Optimization, 9 (1999), pp. 755778] for the solution of nonlinear large-scale problems.*"

Group references together: `\cite{foo,bar}` instead of `\cite{foo}`, `\cite{bar}`.

Examples are included in bibliography, at the end of this document, for journal articles [4], preprints [1], conference papers [8] and books [2].

References to materials not formally published under editorial control, such as websites, personal home pages, Wikipedia, etc. must be provided in footnotes, not included in the References section. For example:

Wikipedia: the photoelectric effect[15] is explained by . . .

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[9] The `siam.bst` style file is available from `http://www.siam.org/journals/auth-info.php`.

[10] Extracts are available online at `http://www.chicagomanualofstyle.org/tools_citationguide.html` and `http://www.lib.sfu.ca/help/writing/chicago-turabian`.

[11] See the Crossref DOI Display Guidelines at `http://www.crossref.org/02publishers/doi_display_guidelines.html`.

[12] `http://www.crossref.org/guestquery/`

[13] `http://isbndb.com/`

[14] `http://www.worldcat.org/advancedsearch`

[15] Wikipedia, http://en.wikipedia.org/w/index.php?title=Photoelectric_effect&oldid=592445603 (3 February 2014)

Other web sites: our implementation uses the GSL library[16] to compute . . .

Acknowledgment

Image Credits

You must mention the origin of *every* image included in the article, with their authors and license. Use a small font size for this section, and set the heigh of the thumbnails to `2em`. For example:

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 Lulu of the Lotus-Eaters (Wikipedia), CC-BY-SA[18]

 Courtesy Philip Greenspun[19]

 Kodak Image Suite[20]

 Standard test image

References

[1] P. Monasse A. Ciomaga, L. Moisan and J.M. Morel, *Image curvature microscope.* preprint, 2010.

[2] D.P. Bertsekas, *Constrained optimization and Lagrange multiplier methods*, Academic Press, 1982. ISBN 1886529043.

[3] Frederick C. Mish, ed., *Merriam-Webster's Collegiate Dictionary*, 11th ed., 2003. ISBN 0877798095.

[4] J.M. Jolion P. Meer and A. Rosenfeld, *A fast parallel algorithm for blind estimation of noise variance*, IEEE Transactions on Pattern Analysis and Machine Intelligence, 12 (1990), pp. 216–223.

[5] W. Strunk and E.B. White, *The Elements of Style*, Longman, 4th ed., 1999. ISBN 020530902X.

[6] K. Turabian, *A Manual for Writers of Research Papers, Theses, and Dissertations*, The University of Chicago Press, 7th ed., 2007. ISBN 075698355X.

[7] J. Williams, *Style — The Basics of Clarity and Grace*, Pearson Longman, 3rd ed., 2008. ISBN 0205605354.

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[16]GSL - GNU Scientific Library, https://www.gnu.org/software/gsl/ (10 March 2013)
[17]http://www.flickr.com/photos/glennji/3558118429/
[18]http://en.wikipedia.org/wiki/File:Sego_lily_cm-150.jpg
[19]http://philip.greenspun.com
[20]http://r0k.us/graphics/kodak/

[8] D. ZORAN AND Y. WEISS, *From learning models of natural image patches to whole image restoration*, in Proceedings of the 13th International Conference on Computer Vision (ICCV), 2011, p. 479486. http://dx.doi.org/10.1109/ICCV.2011.6126278.