RMarkdown Template for IEEE Access Articles

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ABSTRACT The abstract goes here.

INDEX TERMS key; words

I. INTRODUCTION

THIS is an RMarkdown template for working on papers using the IEEE Access format, based on the LaTeX template available for download at https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-journal-article/authoring-tools-and-templates/ieee-article-templates/templates-for-ieee-access/. This is not a detailed review of the IEEE Access template, nor the guidelines on how to write papers that comply with the required formatting and structure of this journal. You can find some details on how to prepare papers for this journal at https://www.sharelatex.com/templates/5a761d0d47ce0af37e1c6035/v/0/pdf?inline=true&name=IEEE%20Access%20template.

Instead, I focused on describing the small changes I added to be able to generate PDF documents with the corresponding general formatting of this journal using RMarkdown.

II. DESCRIPTION

I have used the RMarkdown template for IEEE Trans articles, included in the `rticles` package. The general styling of the document is provided in the `ieeeaccess.cls` file, a LaTeX class file provided by the journal.

All the files are contained in a R project (RStudio). The file structure of the project is:

- The `images` folder contains all the images and figures used to produce this paper.
- The LaTeX templates and classes are stored in the `latex` folder. Bear in mind that the files `template.tex` and `ieeeaccess.cls` are the ones used to structure the paper in the corresponding formatting, so they should not be changed.

- The `bib` folder contains the bibliography files, including the Citation Style file (.csl) to show the references in the corresponding format. This file can be found at https://paperpile.com/s/ieee-access-citation-style/.

The template uses three images (bullet.png, Logo.png, notaglineLogo.png) that have been place in the `images` subdirectory. The `ieeeaccess.cls` file has been modified to be able to access these images in the corresponding folder. This is the only change added to the orignal class file.

A. AUTHORS, AFFILIATIONS AND FOOTNOTES

First, I adjusted the "authors" section, to be able to translate the info from the YAML into a comma-separated list of authors, in the order they have been provided. A reference mark for each author is added, related to the affiliations/institutions and e-mails corresponding to each author. I also added the key membership to be shown in this section.

Some other changes in the YAML are the key corresp, related to the author to whom proofs of the paper will be sent, and also the key footnote , to contain information regarding the support, sponsorship and financial aid for the research project.

1) Biographies

The last section of the paper is destined to the biographies of the authors. For such purpose, a `bios.tex` template has been created. This template will be included after the body and should be modified to include the actual information of the authors.

TABLE 1. This is a table caption

	mpg	cyl	disp	hp	drat	wt
Mazda RX4	21.0	6	160	110	3.90	2.620
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875
Datsun 710	22.8	4	108	93	3.85	2.320
Hornet 4 Drive	21.4	6	258	110	3.08	3.215
Hornet Sportabout	18.7	8	360	175	3.15	3.440
Valiant	18.1	6	225	105	2.76	3.460

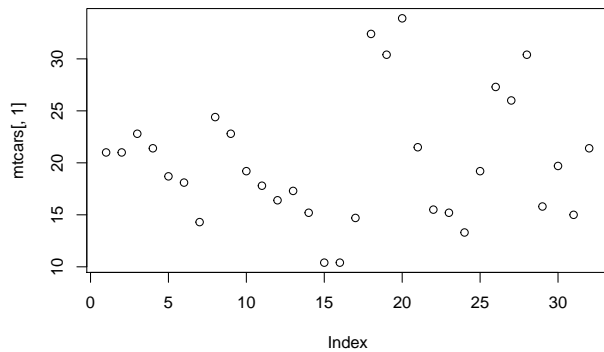**FIGURE 1.** This is a graph

FIGURE 2. This is an image

B. TABLES AND IMAGES

You can create your tables from your own data using any of the available r packages of your choice (find some at https://rmarkdown.rstudio.com/lesson-7.html). Table 1 has been created using `kable`.

There will be conflicts between the `longtable` environment and the two-column format of this paper, so I have opted for not using longtables in any case. Also, I prefer to inlcude my tables using LATEXdirectly, so I can have more control over aspects like borders, column size, cell spacing and alignment, line breaks, ect. That way, I don't have to edit again the TEX file after the generation.

As for images, you can see a graph generated from r code in Figure 1.

Figure 2 shows an image from a file using simple markdown notation.

C. CITATIONS

The citation style is applied using a csl file, which can be seen referenced in the YAML.

An in-text for a single author would look like this [1]. For two authors, it will be shown like this [1], [2]. Finally, multiple consecutive references will appear in the following way [1]–[4].

III. RECOMMENDATIONS

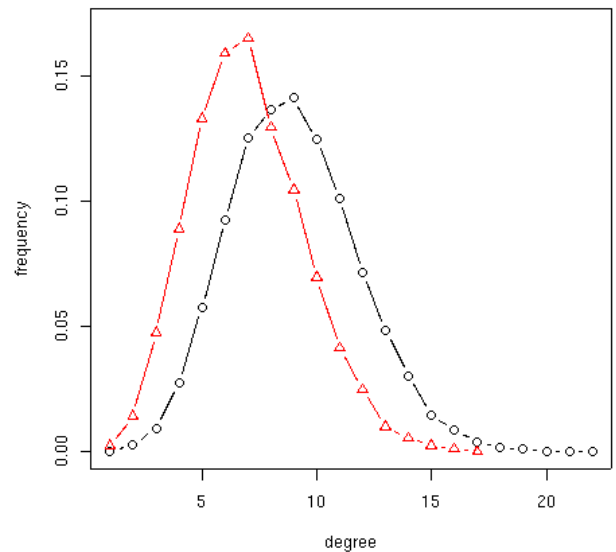When using this template, is important to bear in mind that some information will have to be modified directly in the TEX file generated when knitting to a PDF (see `keep_tex = true` in YAML). That will be the case for:

- Date of publication and DOI shown above the title in the first page, that can be found as `\history{}` and `\doi{}` in the .tex file. This information would not be available while working on a paper, so it can be left blank in the first place.
- Author and title in header, that can be found under `\markboth` tag in .tex file.
- Volume and year in footer, hard-coded to the .cls file. The have not been modified since I tried to keep the changes to the class file to the bare-minimum.

REFERENCES

[1] P. Dirac, "The lorentz transformation and absolute time," Physica, vol. 19, nos. 1 – 12, pp. 888–896, 1953.

[2] R. Feynman and F. Vernon Jr., "The theory of a general quantum system interacting with a linear dissipative system," Annals of Physics, vol. 24, pp. 118–173, 1963.

[3] I. Freely, "A small paper," The journal of small papers, vols. -1, 1997.

[4] H. Jass, "A big paper," The journal of big papers, vol. MCMXCVII, 7991.

AUTHOR ONE All authors may include biographies. Biographies are often not included in conference-related papers. The first paragraph may contain a place and/or date of birth (list place, then date). Next, the author's educational background is listed. The degrees should be listed with type of degree in what field, which institution, city, state, and country, and year the degree was earned. The author's major field of study should be lower-cased.

The second paragraph uses the pronoun of the person (he or she) and not the author's last name. It lists military and work experience, including summer and fellowship jobs. Job titles are capitalized. The current job must have a location; previous positions may be listed without one. Information concerning previous publications may be included. Try not to list more than three books or published articles. The format for listing publishers of a book within the biography is: title of book (publisher name, year) similar to a reference. Current and previous research interests end the paragraph. The third paragraph begins with the author's title and last name (e.g., Dr. Smith, Prof. Jones, Mr. Kajor, Ms. Hunter). List any memberships in professional societies other than the IEEE. Finally, list any awards and work for IEEE committees and publications. If a photograph is provided, it should be of good quality, and professional-looking. Following are two examples of an author's biography.

AUTHOR TWO was born in Somewhere, City, Country in Year. He received a [B.S/M.S.] degree in field from the University of Somewhere in Year and other degree, if any.

From Year to Year, he did Some Work as Some Title at Some Place. Since Year, he has been a Job Title at Somewhere. He also has done some stuff, like research, authoring books and papers, inventions, and whatnot.

Author Two was also recognize as Something in Year by Some Institution, and received the Name Award for Something in Year by Some Other Institution.

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