A Template for Your Manuscript Draft

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Abstract

This abstract introduces a straightforward and highly customizable LaTeX template tailored for scientific paper drafting. The template provides essential elements such as title, abstract, sections, and bibliography. You can easily customize the layout, font styles, and section headings to align with specific journal or conference guidelines. In conclusion, the presented basic and customizable LaTeX template offers a user-friendly solution for drafting scientific papers.

Keywords — LaTeX, Template, Paper, Drafting, Matlab

1   Introduction

In [1], they show that for researchers is crucial to focus on research findings. Figure 1 shows a relaxed cat. Note that the first author in [1] loves cats.

Figure 1: A relaxed cat picture, saved in JPG format. Source.

2   Materials and Methods

$\boldsymbol{x} \in \mathbb{R}^3$ is a three-dimensional vector, while $\boldsymbol{Y} \in \mathbb{R}^{3\times6}$ is a three-by-six matrix. The *mass-energy* equation reads

$$E = mc^2 \tag{1}$$

Equation 1 is very famous.

3   Results

To visualize the sparsity pattern of a matrix $\boldsymbol{S} \in \mathbb{R}^{100 \times 100}$ and the classification of the Fisher's iris dataset, you can use the Matlab source codes 1-2. Running these codes will produce the output Figure 2.

Listing 1: Matlab code for Figure 2a

```
S = sprand (100 ,100 ,0.1) ;
spy (S) ;
```

Listing 2: Matlab code for Figure 2b

```
load fisheriris.mat ;
gscatter ( meas (: ,1) , meas (: ,2) , species ,'rgb', 'osd') ;
xlabel ('Sepal length') ;
ylabel ('Sepal width') ;
```

To correctly size figures without rescaling, you need to know the \textwidth and \textheight LaTex is using. To do so, add the layourts package (here is already included!) and \printinunitsof{cm}\prntlen{\textwidth} (or \printinunitsof{cm}\prntlen{\textheight}) gives \textwidth = 17.5875cm (or \textheight = 22.93674cm). This information is an input for ffsp: a Matlab function written to nicely format figures. For instance, to produce Figure 2 we added ffsp(gcf,gca,17.5875,22.93674,1,2) to both source codes 1-2. The interset reader may refer to the documentation of ffsp and find more examples in Appendix A.
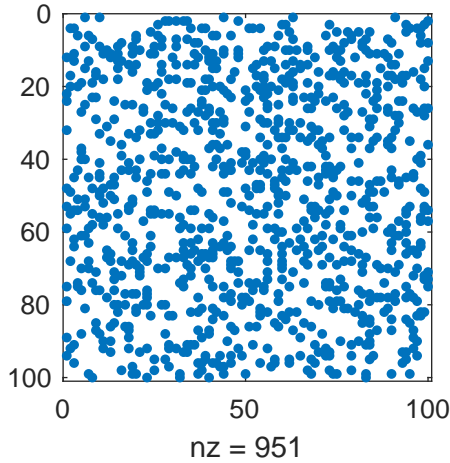
(a) Sparsity pattern of matrix $\boldsymbol{S}$.
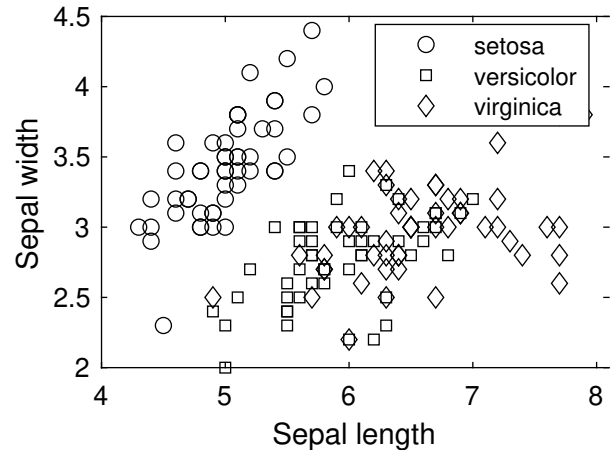
(b) Classification of the Fisher's iris dataset.

Figure 2: PDF (a) and EPS (b) generated figures.

4   Discussion

Section 1 showed how citation works. 2 briefly touched on mathematical notation, and Section 3 presented how to format tables and figures. In Table 1, you can see the past and expected visits of Aliens to Earth.

Date of Visit	Travel Duration	Landing Location	Distance Traveled (Km)
2022-03-15	1 year	Area 51, Nevada, USA	450 000
2023-01-08	6 months	Giza Pyramid Complex, Egypt	250 000
2023-06-20	2 years	The Great Wall of China	802 349
2024-02-12	3 months	Machu Picchu, Peru	1 500 490
2024-09-30	5 years	Mount Kilimanjaro, Tanzania	1 200 000
2025-05-18	1.5 years	Stonehenge, United Kingdom	600 000
2026-11-02	8 months	Mount Everest, Nepal	300 000
2027-08-10	4 years	Ayers Rock (Uluru), Australia	1 000 000
2028-12-24	2.5 years	Taj Mahal, India	700 422
2029-09-03	3.5 years	Christ the Redeemer, Brazil	900 000

Table 1: ChatGPT generated data about past and expected Alien visits to Earth.

For a good-looking document, there are many sophisticated and comprehensive tools to format Matlab-generated figures, like `export_fig` and `plotly_matlab`. However, here (see Appendix A), we focus on and use a basic version of such software called `ffsp`.

A   `ffsp` - Examples

Please refer to the Matlab examples located in the `matlab/examples` folder. The figures in Figure 3, Figure 4, and Figure 5 are generated from the following files: `complex_2_by_3.m`, `matlab_logo_2_by_2.m`, and `tansin_4_by_4.m`, respectively.

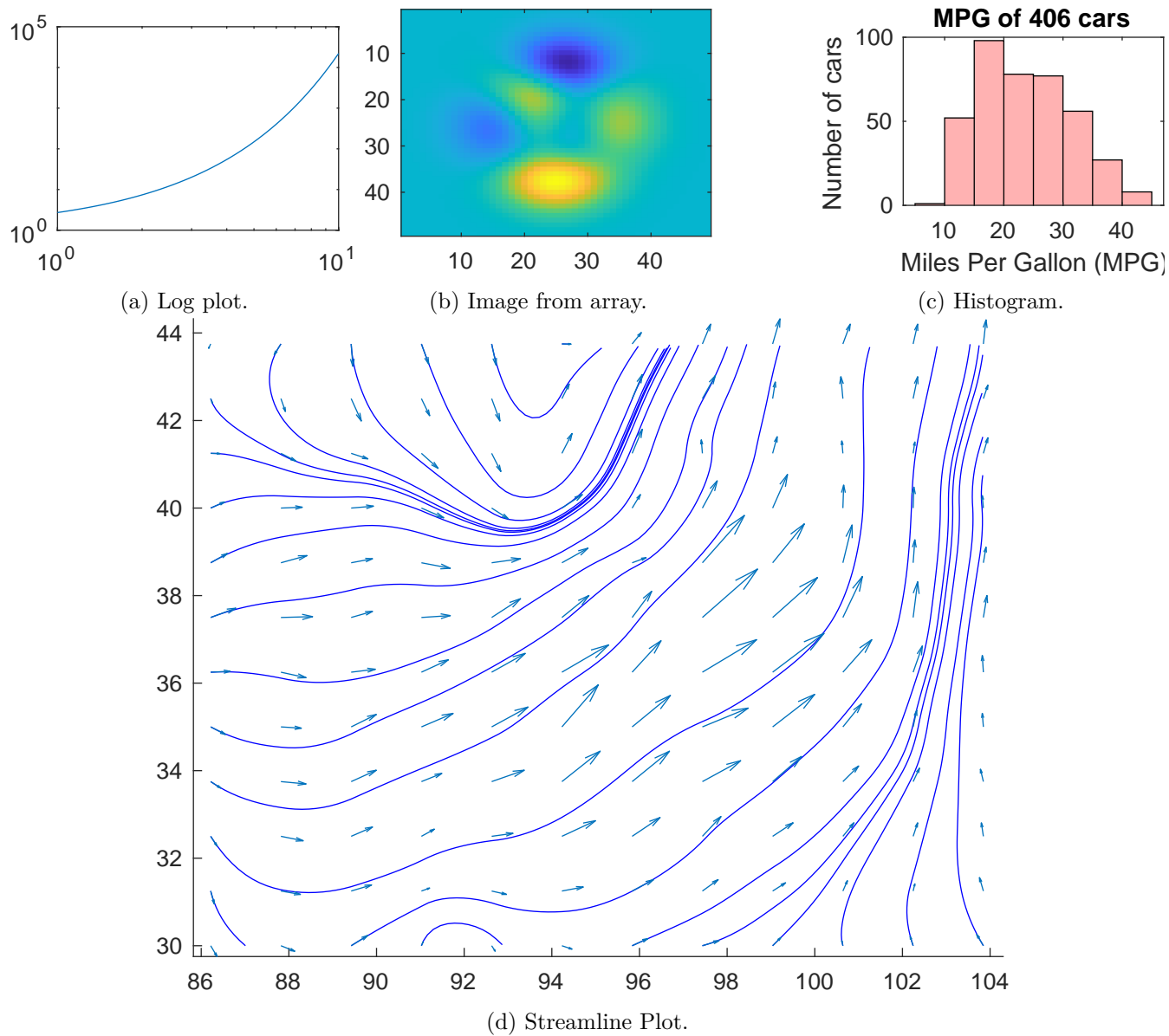(a) Log plot.

(b) Image from array.
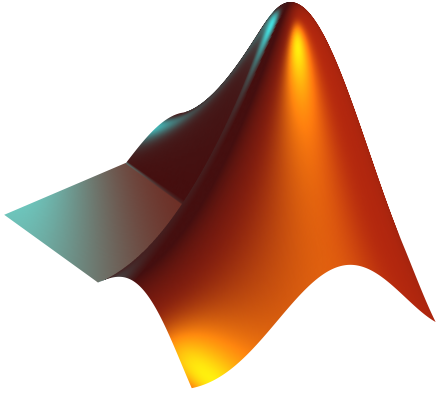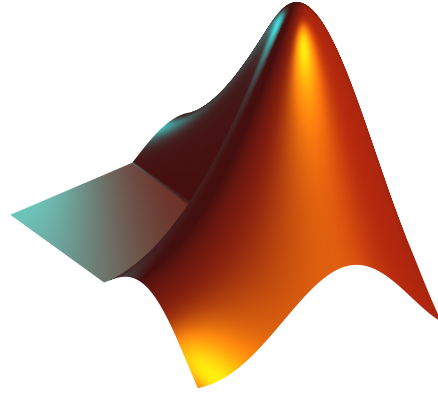

(c) Histogram.
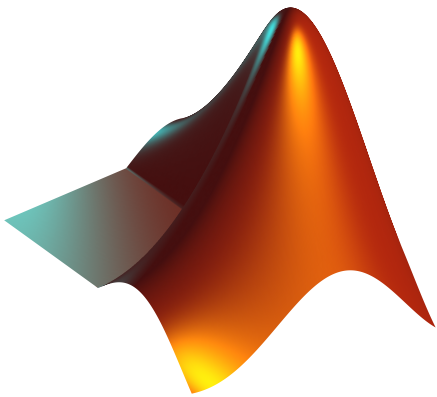

(d) Streamline Plot.
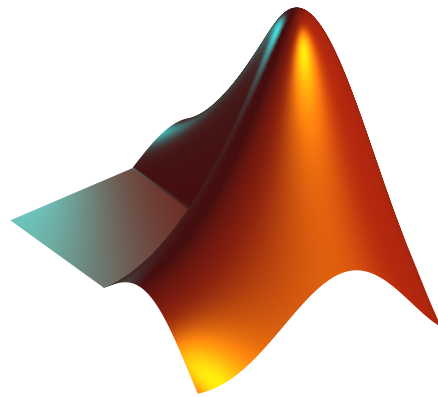
Figure 3: A complex figure in a 2-by-3 grid layout.

(a) Another subcation.

(b) Another subcation.

(c) Another subcation.

(d) Another subcation.

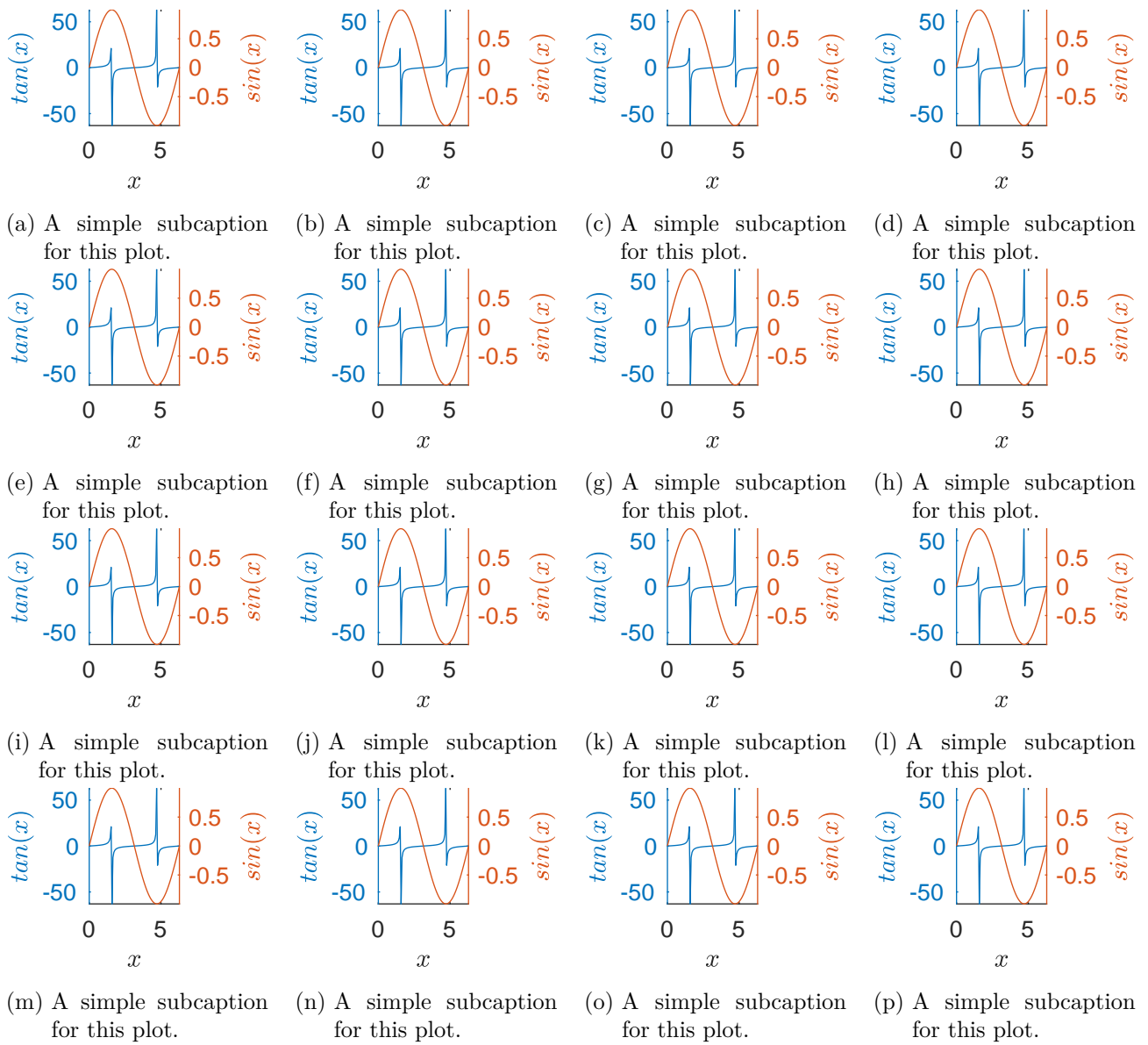Figure 4: Matlab logos in a 2-by-2 grid layout.

(a) A simple subcaption for this plot.

(b) A simple subcaption for this plot.

(c) A simple subcaption for this plot.

(d) A simple subcaption for this plot.

(e) A simple subcaption for this plot.

(f) A simple subcaption for this plot.

(g) A simple subcaption for this plot.

(h) A simple subcaption for this plot.

(i) A simple subcaption for this plot.

(j) A simple subcaption for this plot.

(k) A simple subcaption for this plot.

(l) A simple subcaption for this plot.

(m) A simple subcaption for this plot.

(n) A simple subcaption for this plot.

(o) A simple subcaption for this plot.

(p) A simple subcaption for this plot.

Figure 5: Two trigonometric functions in a 4-by-4 grid layout.

List of Figures

List of Tables

Listings

References

[1] A Clever Researcher. How to be a clever researcher. *Good Journal*, 2023. [Cited on page 1]