The Search for an Autism Biomarker

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Abstract

Using LaTeX to write papers is concise and convenient. However, for writing in life, complicated LaTeX style-files (e.g., elegantpaper) are difficult to access, or submission style-files (e.g., journal or conference) are not free indeed. To tackle these problems and satisfy an elegant and straightforward scientific writing, **paperlighter.sty**, a one-column style-file, is designed. This document is edited from icml2022.sty and provides a basic paper template. Compared to icml2022.sty, paperlighter.sty contain fewer operations, reducing adjustment while keep graceful. *Notably, the paper's main content only describes the format of icml2022.sty. We place the content to show the actual effect of paperlighter.sty.*

1. Format of the Paperlighter

Format of paperlighter is defined in this section. Here's a reference (Craddock et al., 2013)

1.1. Dimensions

The text of the paper has an overall width of 6.75 inches, and height of 9.0 inches. The left margin should be 0.75 inches and the top margin 1.0 inch (2.54 cm). The right and bottom margins will depend on whether you print on US letter or A4 paper, but all final versions must be produced for US letter size.

The paper body should be set in 10 point type with a vertical spacing of 11 points. Please use Times typeface throughout the text.

1.2. Title

The paper title should be set in 14 point bold type and centered between two horizontal rules that are 1 point thick, with 1.0 inch between the top rule and the top edge of the page. Capitalize the first letter of content words and put the rest of the title in lower case.

1.3. Author Information for Submission

Use `\lighterauthor{...}` to specify authors and `\lighteraddress{...}` to specify affiliations. (Read the TeX code used to produce this document for an example usage.) The author information will not be printed unless `accepted` is passed as an argument to the style file.

1.4. Abstract

The paper abstract should begin in the left column, 0.4 inches below the final address. The heading 'Abstract' should be centered, bold, and in 11 point type. The abstract body should use 10 point type, with a vertical spacing of 11 points, and should be indented 0.25 inches more than normal on left-hand and right-hand margins. Insert 0.4 inches of blank space after the body. Keep your abstract brief and self-contained, limiting it to one paragraph and roughly 4–6 sentences. Gross violations will require correction at the camera-ready phase.

1.5. Partitioning the Text

You should organize your paper into sections and paragraphs to help readers place a structure on the material and understand its contributions.

1.5.1. SECTIONS AND SUBSECTIONS

Section headings should be numbered, flush left, and set in 11 pt bold type with the content words capitalized. Leave 0.25 inches of space before the heading and 0.15 inches after the heading.

Similarly, subsection headings should be numbered, flush left, and set in 10 pt bold type with the content words capitalized. Leave 0.2 inches of space before the heading and 0.13 inches afterward.

Finally, subsubsection headings should be numbered, flush left, and set in 10 pt small caps with the content words capitalized. Leave 0.18 inches of space before the heading and 0.1 inches after the heading.

Please use no more than three levels of headings.

1.5.2. PARAGRAPHS AND FOOTNOTES

Within each section or subsection, you should further partition the paper into paragraphs. Do not indent the first line of a given paragraph, but insert a blank line between succeeding ones.

You can use footnotes[1] to provide readers with additional information about a topic without interrupting the flow of the paper. Indicate footnotes with a number in the text where the point is most relevant. Place the footnote in 9 point type at the bottom of the column in which it appears. Precede the first footnote in a column with a horizontal rule of 0.8 inches.[2]

1.6. Figures

You may want to include figures in the paper to illustrate your approach and results. Such artwork should be centered, legible, and separated from the text. Lines should be dark and at least 0.5 points thick for purposes of reproduction, and text should not appear on a gray background.

Label all distinct components of each figure. If the figure takes the form of a graph, then give a name for each axis and include a legend that briefly describes each curve. Do not include a title inside the figure; instead, the caption should serve this function.

Number figures sequentially, placing the figure number and caption *after* the graphics, with at least 0.1 inches of space before the caption and 0.1 inches after it, as in Figure 1 and Figure 2. The figure caption should be set in 9 point type and centered unless it runs two or more lines, in which case it should be flush left. You may float figures to the top or bottom of a column, and you may set wide figures across both columns (use the environment `figure*` in LaTeX). Always place two-column figures at the top or bottom of the page.

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[1]Footnotes should be complete sentences.

[2]Multiple footnotes can appear in each column, in the same order as they appear in the text, but spread them across columns and pages if possible.
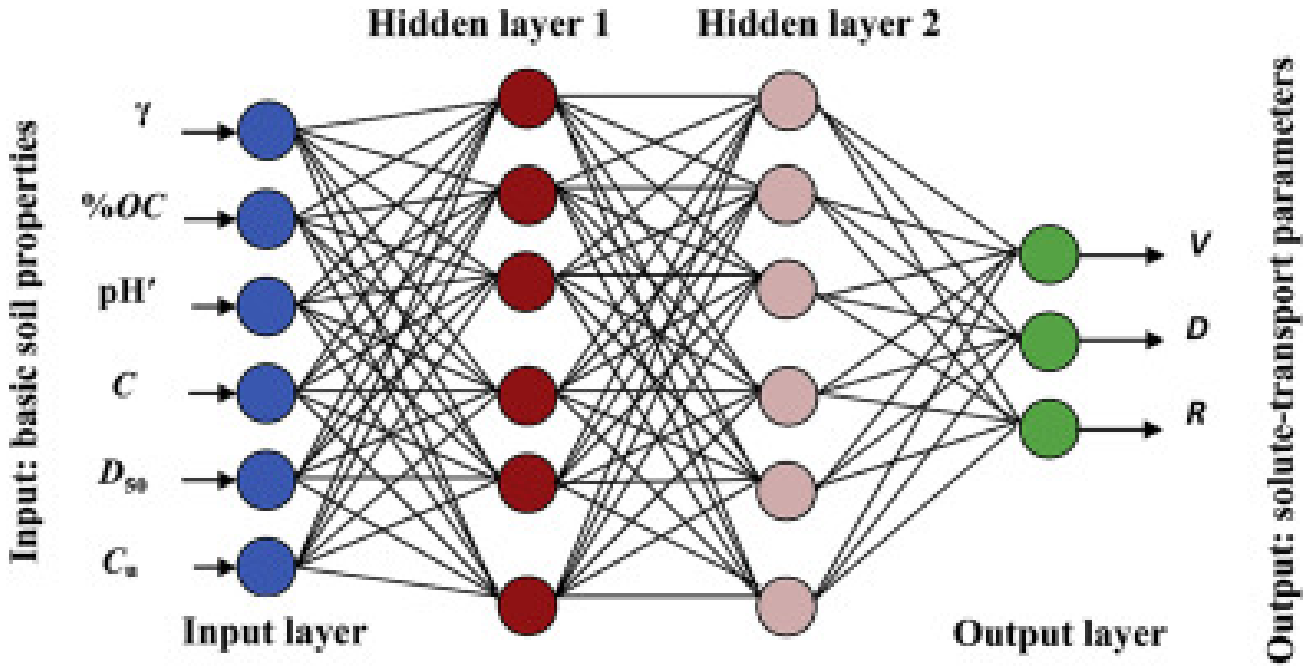
Figure 1. Historical locations and number of accepted papers for International Machine Learning Conferences (ICML 1993 – ICML 2008) and International Workshops on Machine Learning (ML 1988 – ML 1992). At the time this figure was produced, the number of accepted papers for ICML 2008 was unknown and instead estimated.

1.7. Algorithms

If you are using LaTeX, please use the "algorithm" and "algorithmic" environments to format pseudocode. These require the corresponding stylefiles, algorithm.sty and algorithmic.sty, which are supplied with this package. Algorithm 1 shows an example.

1.8. Tables

You may also want to include tables that summarize material. Like figures, these should be centered, legible, and numbered consecutively. However, place the title *above* the table with at least 0.1 inches of space before the title and the same after it, as in Table 1. The table title should be set in 9 point type and centered unless it runs two or more lines, in which case it should be flush left.

Tables contain textual material, whereas figures contain graphical material. Specify the contents of each row and column in the table's topmost row. Again, you may float tables to a column's top or bottom, and set wide tables across both columns. Place two-column tables at the top or bottom of the page.

1.9. Theorems and such

The preferred way is to number definitions, propositions, lemmas, etc. consecutively, within sections, as shown below.

Definition 1.1. A function $f : X \to Y$ is injective if for any $x, y \in X$ different, $f(x) \neq f(y)$.

Input layer

Hidden layers

Output layer

x_1

x_2

x_3

x_4

$\Sigma \;|\; f$

$\Sigma \;|\; f$

$\Sigma \;|\; f$

$\Sigma \;|\; f$

$\Sigma \;|\; f$

$\Sigma \;|\; f$

$\Sigma \;|\; f$

$\Sigma \;|\; f$

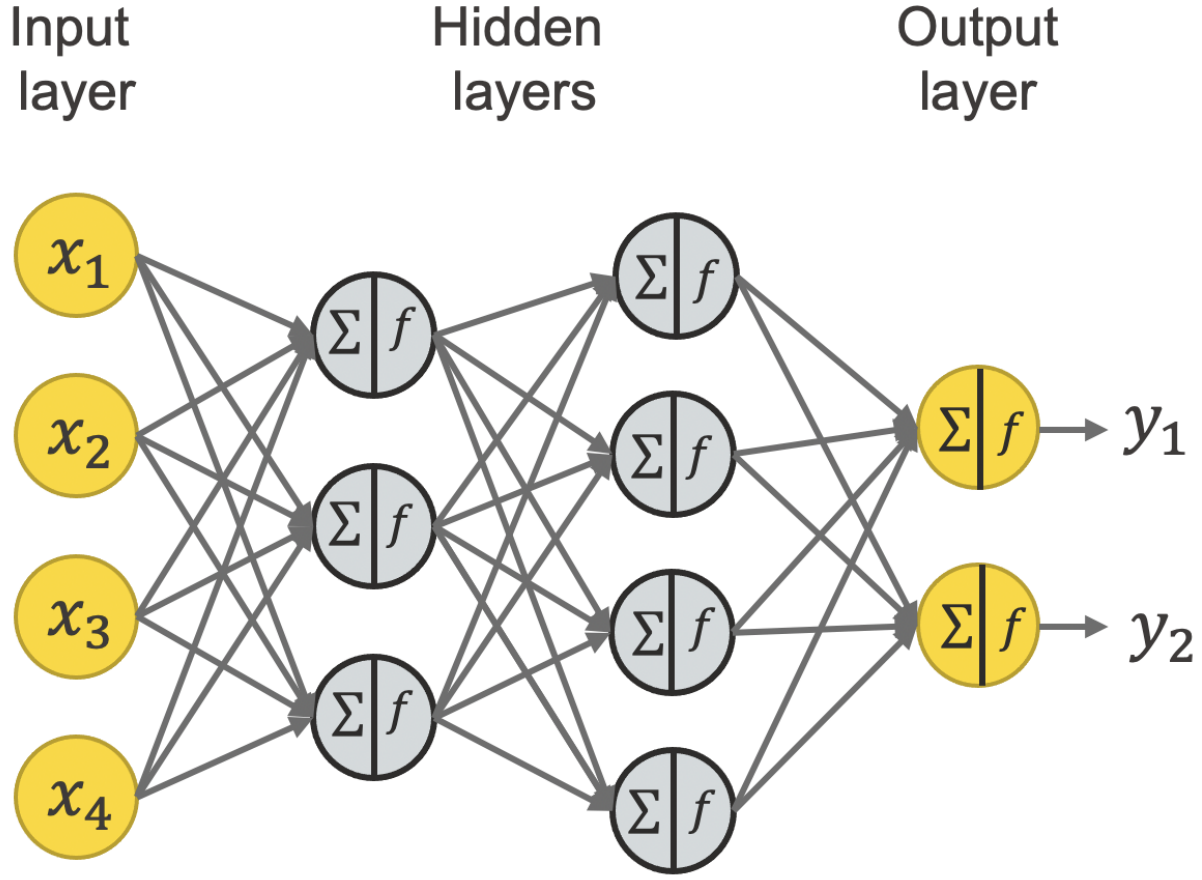$\Sigma \;|\; f \longrightarrow y_1$

$\Sigma \;|\; f \longrightarrow y_2$

Figure 2. Historical locations and number of accepted papers for International Machine Learning Conferences (ICML 1993 – ICML 2008) and International Workshops on Machine Learning (ML 1988 – ML 1992). At the time this figure was produced, the number of accepted papers for ICML 2008 was unknown and instead estimated.

Using Definition 1.1 we immediate get the following result:

Proposition 1.2. *If f is injective mapping a set X to another set Y, the cardinality of Y is at least as large as that of X*

Proof. Left as an exercise to the reader. □

Lemma 1.3 stated next will prove to be useful.

Lemma 1.3. *For any $f : X \to Y$ and $g : Y \to Z$ injective functions, $f \circ g$ is injective.*

Theorem 1.4. *If $f : X \to Y$ is bijective, the cardinality of X and Y are the same.*

An easy corollary of Theorem 1.4 is the following:

Corollary 1.5. *If $f : X \to Y$ is bijective, the cardinality of X is at least as large as that of Y.*

Algorithm 1 Bubble Sort

    Input: data x_i, size m
    repeat
      Initialize $noChange = true$.
      for $i = 1$ **to** $m - 1$ **do**
        if $x_i > x_{i+1}$ **then**
          Swap x_i and x_{i+1}
          $noChange = false$
        end if
      end for
    until $noChange$ is $true$

Table 1. Classification accuracies for naive Bayes and flexible Bayes on various data sets.

DATA SET	NAIVE	FLEXIBLE	BETTER?
BREAST	95.9± 0.2	96.7± 0.2	√
CLEVELAND	83.3± 0.6	80.0± 0.6	×
GLASS2	61.9± 1.4	83.8± 0.7	√
CREDIT	74.8± 0.5	78.3± 0.6	
HORSE	73.3± 0.9	69.7± 1.0	×
META	67.1± 0.6	76.5± 0.5	√
PIMA	75.1± 0.6	73.9± 0.5	
VEHICLE	44.9± 0.6	61.5± 0.4	√

Assumption 1.6. The set X is finite.

Remark 1.7. According to some, it is only the finite case (cf. Assumption 1.6) that is interesting.

1.10. Citations and References

If you rely on the LaTeX bibliographic facility, use `natbib.sty` included in the style-file package to obtain reference.

Citations within the text should include the authors' last names and year. If the authors' names are included in the sentence, place only the year in parentheses, for example when referencing Arthur Samuel's pioneering work (1959). Otherwise place the entire reference in parentheses with the authors and year separated by a comma (Samuel, 1959). List multiple references separated by semicolons (Kearns, 1989; Samuel, 1959; Mitchell, 1980). Use the 'et al.' construct only for citations with three or more authors or after listing all authors to a publication in an earlier reference (Michalski et al., 1983).

Use an unnumbered first-level section heading for the references, and use a hanging indent style, with the first line of the reference flush against the left margin and subsequent lines indented by 10 points. The references at the end of this document give examples for journal articles (Samuel, 1959), conference publications (Langley, 2000), book chapters (Newell and Rosenbloom, 1981), books (Duda et al., 2000), edited volumes (Michalski et al., 1983), technical reports (Mitchell, 1980), and dissertations (Kearns, 1989).

Alphabetize references by the surnames of the first authors, with single author entries preceding multiple author entries. Order references for the same authors by year of publication, with the earliest first. Make sure that each reference includes all relevant information (e.g., page numbers).

Please put some effort into making references complete, presentable, and consistent, e.g. use the actual current name of authors. If using bibtex, please protect capital letters of names and abbreviations in titles, for example, use {B}ayesian or {L}ipschitz in your .bib file.

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