

Authors' instructions for the preparation of camera-ready contributions*

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Abstract. The abstract should summarize the contents of the paper. It should be set in 9-point font size and should be inset 1.0 cm from the right and left margins. There should be two blank (10-point) lines before and after the abstract. The abstract should summarize the contents of the paper and no more. It should be set in 9-point font size and should be inset 1.0 cm from the right and left margins. There should be two blank (10-point) lines before and after the abstract. Please, no less than 350 characters and no more than 550 ones, blanks included.

Keywords. Multi-layer perceptron, learning algorithms, Monte Carlo methods.

M.S.C. classification. 62M45, 65C05, 68T05.

J.E.L. classification. C15, C45, D83.

1 Introduction

The preparation of manuscripts which are to be reproduced by photo-offset requires special care. Papers submitted in a technically unsuitable form will be returned for retyping.

* Supported by ...

<p>Mathematical Methods in Economics and Finance – m²ef Vol. ..., No. ..., ...</p>

1.1 M2EF online

We provide this template. It is important to notice that the final version of your contribution cannot be modified at a later stage. The author has to send: the source (input) files, e.g. \LaTeX files for the text and PS or EPS or ... files for figures, the final DVI file,¹ and the PDF file of the final version of your contribution.

2 Manuscript preparation

You are strongly encouraged to use this template for the preparation of your camera-ready manuscript together with the M2EF class file `mmef.cls`; see Section 3. Only if you use $\text{\LaTeX}_{2\epsilon}$ can hyperlinks be generated in the online version of your manuscript.

We would like to stress that the class/style files and the template should not be manipulated and that the guidelines regarding font sizes and format should be adhered to. This is to ensure that the end product is as homogeneous as possible.

2.1 Printing area

The printing area is 122 mm \times 193 mm. The text should be justified to occupy the full line width, so that the right margin is not ragged, with words hyphenated as appropriate. Please fill pages so that the length of the text is no less than 180 mm.

2.2 Layout, typeface, font sizes, and numbering

Use 10-point type for the name(s) of the author(s) and 9-point type for the address(es) and the abstract. For the main text, please use 10-point type and single-line spacing. We recommend using Computer Modern Roman (CM) fonts, Times, or one of the similar typefaces widely used in photo-typesetting. (In these typefaces the letters have serifs, i.e., short endstrokes at the head and the foot of letters.) Italic type may be used to emphasize words in running text. Bold type and underlining should be avoided. With these sizes, the interline distance should be set so that some 45 lines occur on a full-text page.

Headings. Headings should be capitalized (i.e., nouns, verbs, and all other words except articles, prepositions, and conjunctions should be set with an initial capital) and should, with the exception of the title, be aligned to the left. Words joined by a hyphen are subject to a special rule. If the first word can stand alone, the second word should be capitalized. The font sizes are given in Table 1.

¹ Footnote.

Table 1. Font sizes of headings. Table captions should always be positioned *above* the tables. The final sentence of a table caption should end without a period

Heading level	Example	Font size and style
Title (centered)	Lecture Notes ...	14 point, bold
1st-level heading	1 Introduction	12 point, bold
2nd-level heading	2.1 Printing Area	10 point, bold
3rd-level heading	Headings. Text follows ...	10 point, bold
4th-level heading	<i>Remark.</i> Text follows ...	10 point, italic

Here are some examples of headings: “Criteria to Disprove Context-Freeness of Collage Languages”, “On Correcting the Intrusion of Tracing Non-deterministic Programs by Software”, “A User-Friendly and Extendable Data Distribution System”, “Multi-flip Networks: Parallelizing GenSAT”, “Self-determinations of Man”.

Lemmas, propositions, and theorems. The numbers accorded to lemmas, propositions, theorems, etc. should appear in consecutive order, starting with the number 1, and not, for example, with the number 11.

An example of proposition and related proof is the following one:

Proposition 1. *Let E_i denote the event “ $w_j(i) \in (w^*(i) - \varepsilon^-(i), w^*(i) + \varepsilon^+(i))$ ”, where $\varepsilon^-(i), \varepsilon^+(i) > 0$, for a $j \in \{1, \dots, N\}$ and with $i = 1, \dots, M$. If $\underline{w}^* \in \mathbf{W}$, if the values $w_j(i)$ are generated by a realization of M mutually independent random variables, each of them uniformly distributed in $[a(i), b(i)]$ respectively, and if $\varepsilon^-(i) < w^*(i) - a(i)$ and $\varepsilon^+(i) < b(i) - w^*(i)$, then*

$$p = \Pr(E_1 \wedge \dots \wedge E_i \wedge \dots \wedge E_M) = \prod_{i=1}^M \frac{\varepsilon^+(i) + \varepsilon^-(i)}{b(i) - a(i)} \quad (1)$$

and

$$p \in (0, 1). \quad (2)$$

Proof. The values $w_j(i)$, for a $j \in \{1, \dots, N\}$ and with $i = 1, \dots, M$, are generated by a realization of M mutually independent random variables. Due to their mutual independence,

$$p = \Pr(E_1 \wedge \dots \wedge E_i \wedge \dots \wedge E_M) = \prod_{i=1}^M \Pr(E_i). \quad (3)$$

Furthermore, each of these random variables is uniformly distributed in $[a(i), b(i)]$ respectively, therefore

$$\begin{aligned}
\Pr(E_i) &= \Pr(w_j(i) \in (w^*(i) - \varepsilon^-(i), w^*(i) + \varepsilon^+(i))) = \\
&= \{[w^*(i) + \varepsilon^+(i)] - [w^*(i) - \varepsilon^-(i)]\} \frac{1}{b(i) - a(i)} = \\
&= \frac{\varepsilon^+(i) + \varepsilon^-(i)}{b(i) - a(i)}, \text{ with } i = 1, \dots, M.
\end{aligned} \tag{4}$$

Now, substituting (4) in (3) one obtains the thesis (1).

With regard to the thesis (2), recalling that by hypothesis $\varepsilon^-(i), \varepsilon^+(i) > 0$ for all $i = 1, \dots, M$, and that by construction $a(i) < b(i)$ (see section 2), one has

$$\Pr(E_i) = \frac{\varepsilon^+(i) + \varepsilon^-(i)}{b(i) - a(i)} > 0, \text{ with } i = 1, \dots, M,$$

from which $p > 0$.² Moreover, by hypothesis $\varepsilon^-(i) < w^*(i) - a(i)$ and $\varepsilon^+(i) < b(i) - w^*(i)$, with $i = 1, \dots, M$, therefore

$$\varepsilon^+(i) + \varepsilon^-(i) < [b(i) - w^*(i)] + [w^*(i) - a(i)] = b(i) - a(i), \text{ with } i = 1, \dots, M,$$

from which

$$\Pr(E_i) = \frac{\varepsilon^+(i) + \varepsilon^-(i)}{b(i) - a(i)} < 1, \text{ with } i = 1, \dots, M,$$

from which $p < 1$. \square

An example of corollary and related proof is the following one:

Corollary 1. *Let $E_{i,1}$ denote the event “ $w_j(i) \in (\bar{w}_1(i) - \varepsilon^-(i), \bar{w}_1(i) + \varepsilon^+(i))$ ” and let $E_{i,2}$ denote the event “ $w_j(i) \in (\bar{w}_2(i) - \varepsilon^-(i), \bar{w}_2(i) + \varepsilon^+(i))$ ”, where $\{\bar{w}_1(1), \dots, \bar{w}_1(i), \dots, \bar{w}_1(M)\}, \{\bar{w}_2(1), \dots, \bar{w}_2(i), \dots, \bar{w}_2(M)\} \in \mathbf{W}$ and $\varepsilon^-(i), \varepsilon^+(i) > 0$, for a $j \in \{1, \dots, N\}$ and with $i = 1, \dots, M$. If the values $w_j(i)$ are generated by a realization of M mutually independent random variables, each of them uniformly distributed in $[a(i), b(i)]$ respectively, and if $\varepsilon^-(i) < \bar{w}_h(i) - a(i)$ and $\varepsilon^+(i) < b(i) - \bar{w}_h(i)$, with $h = 1, 2$, then*

$$\begin{aligned}
\Pr(E_{1,1} \wedge \dots \wedge E_{i,1} \wedge \dots \wedge E_{M,1}) &= \Pr(E_{1,2} \wedge \dots \wedge E_{i,2} \wedge \dots \wedge E_{M,2}) = \\
&= \prod_{i=1}^M \frac{\varepsilon^+(i) + \varepsilon^-(i)}{b(i) - a(i)}.
\end{aligned} \tag{5}$$

Proof. It is sufficient to mime the proof provided for the thesis (1) substituting $\bar{w}_h(i)$ to $w^*(i)$, with $h = 1, 2$ and with $i = 1, \dots, M$. \square

² Notice that if there exists $\bar{i} \in \{1, \dots, M\}$ such that $\varepsilon^-(\bar{i}) = \varepsilon^+(\bar{i}) = 0$, then $p = 0$.

2.3 Figures

Please produce your (black and white) figures electronically, and integrate them into your text file (see Section 3).

Check that in line drawings, lines are not interrupted and have constant width. Grids and details within the figures must be clearly readable and may not be written one on top of the other. Line drawings should have a resolution of at least 800 dpi (preferably 1200 dpi). For digital halftones 300 dpi is usually sufficient. The lettering in figures should have a height of 2 mm (10-point type). Figures should be scaled up or down accordingly.

Figures should be numbered and should have a caption which should always be positioned *under* the figures, in contrast to the caption belonging to a table, which should always appear *above* the table. Please center the captions between the margins and set them in 9-point type (Fig. 1 shows an example). The distance between text and figure should be about 8 mm, the distance between figure and caption about 5 mm.

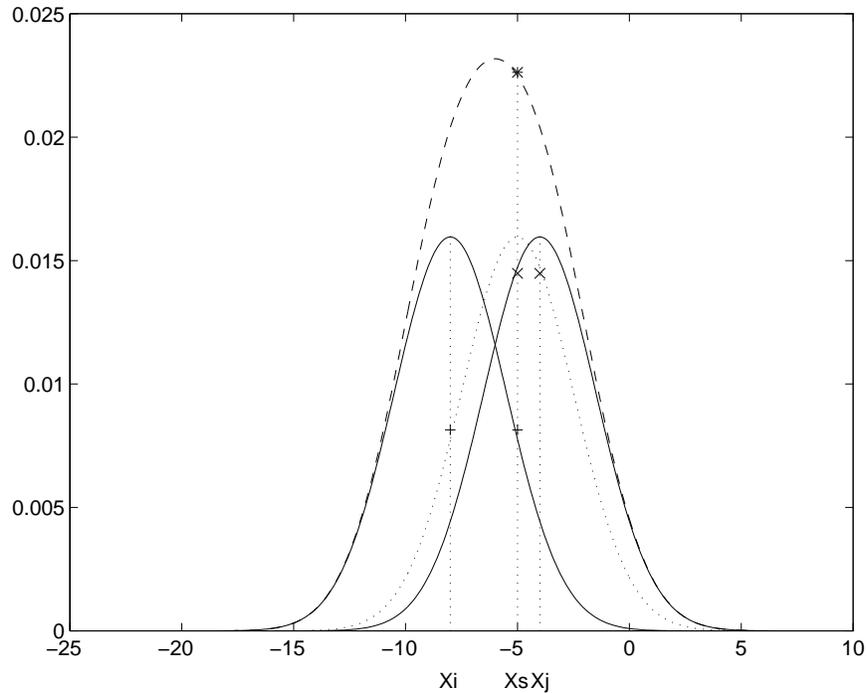


Fig. 1. One kernel at x_s (*dotted kernel*) or two kernels at x_i and x_j (*left and right*) lead to the same summed estimate at x_s . This shows a figure consisting of different types of lines. Elements of the figure described in the caption should be set in italics, in parentheses, as shown in this sample caption. The last sentence of a figure caption should generally end without a period

Please define figures as floating objects. L^AT_EX users, please avoid using the location parameter “h” for “here”. If you have to insert a pagebreak before a figure, please ensure that the previous page is completely filled.

Remark 1. It is forbidden the use of colors in figures. In any case, they will be reproduced in black and white (halftones).

Remark 2. To ensure that the reproduction of your illustrations is of reasonable quality we advise against the use of shading. The contrast should be as pronounced as possible. This particularly applies for screenshots.

2.4 Formulas

Displayed equations or formulas are centered and set on a separate line (with an extra line or halfline space above and below). Displayed expressions should be numbered for reference. The numbers should be consecutive within each section or within the contribution, with numbers enclosed in parentheses and set on the right margin. For example,

$$\psi(u) = \int_o^T \left[\frac{1}{2} (A_\sigma^{-1}u, u) + N^*(-u) \right] dt . \quad (6)$$

Please punctuate a displayed equation in the same way as ordinary text but with a small space before the end punctuation. L^AT_EX users can find more examples of how to typeset equations in the file `mnef.dem` (see Sect. 3).

2.5 Program code

Program listings or program commands in the text are normally set in typewriter font, e.g., CMTT10 or Courier.

Example of a Computer Program

```
program Inflation (Output)
  {Assuming annual inflation rates of 7%, 8%, and 10%,...
  years};
  const
    MaxYears = 10;
  var
    Year: 0..MaxYears;
    Factor1, Factor2, Factor3: Real;
  begin
    Year := 0;
    Factor1 := 1.0; Factor2 := 1.0; Factor3 := 1.0;
    WriteLn('Year 7% 8% 10%'); WriteLn;
    repeat
      Year := Year + 1;
```

```
Factor1 := Factor1 * 1.07;  
Factor2 := Factor2 * 1.08;  
Factor3 := Factor3 * 1.10;  
WriteLn(Year:5,Factor1:7:3,Factor2:7:3,Factor3:7:3)  
until Year = MaxYears  
end.
```

(Example from Jensen K., Wirth N. (1991) Pascal user manual and report. Springer, New York)

2.6 Footnotes

The superscript numeral used to refer to a footnote appears in the text either directly after the word to be discussed or – in relation to a phrase or a sentence – following the punctuation sign (comma, semicolon, or period). Footnotes should appear at the bottom of the normal text area.³

2.7 Citations

The list of references is headed “References” and is not assigned a number in the decimal system of headings. The list should be set in small print and placed at the end of your contribution, in front of the appendix, if one exists. Please do not insert a pagebreak before the list of references if the page is not completely filled. An example is given at the end of this information sheet. For citations in the text please use square brackets and consecutive numbers: [9], [3], [7] ...

2.8 Printing quality

For reproduction we prefer the text to be centered on the pages (i.e., equal margins left and right and top and bottom). The format of the paper (A4) is relevant.

3 Using L^AT_EX₂_ε

You will get the best results and your files will be easiest to handle if you use L^AT_EX₂_ε for the preparation of your camera-ready manuscript together with the corresponding M2EF class file `mmef.cls`.

³ The footnote numeral is set flush left and the text follows with the usual word spacing. Second and subsequent lines are indented. Footnotes should end with a period.

3.1 How to access the M2EF L^AT_EX_{2 ϵ} , L^AT_EX, and T_EX macro packages

Now, we provide some example about the quoting of an unexisting ftp/gopher containing unexisting files:

Ftp: The internet address is `ftp.mmef.it`, the user ID is `ftp` or `anonymous`. Please enter your email address as password. The files (mentioned above) can be found in `/pub/tex`. In the directory `ftp://ftp.mmef.it/pub/latex2e` you will find all files belonging to the L^AT_EX_{2 ϵ} package for M2EF. `m2ef.dem` is a sample input file which you may use as a source for your own input. `m2ef.doc` is the documentation of the class; `m2ef.dvi` the resulting DVI file of `m2ef.doc`.

Gopher: Point your client to `ftp.m2ef.it`.

Mailserver: Send an email message to `svserv@vax.ntp.m2ef.it` containing the line

```
get /tex/latex/m2ef.zip to get the LATEX2 $\epsilon$  style files.
```

Sending `help` to the server prompts advice on how to interact with the mail server. The style files must be unzipped and uu-decoded before use.

4 Checklist

When submitting your camera-ready manuscript to the volume editors, please make sure you include the following:

- your source (input) files, e.g. L^AT_EX files for the text and for the figures,
- any style files, templates, and special fonts you may have used,
- the final DVI file (for papers prepared using L^AT_EX_{2 ϵ}),
- the final PDF file (not in reverse order).

If supplementary material is available, please provide the volume editors with

- a short description of the supplementary material,
- the supplementary material itself or the URL at which it can be found,
- the files of color figures for the electronic version.

Appendix: M2EF-author facilities

All authors of M2EF books are entitled to receive a copy of the volume itself. Now, we provide an example of unexisting emails:

`orders@m2ef.it` or `orders@m2ef-it.com`.

References

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