
Formatting instructions for Tackling Climate Change with Machine Learning: workshop at NeurIPS 2021

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Affiliation

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Abstract

1 The abstract paragraph should be indented ½ inch (3 picas) on both the left- and
2 right-hand margins. Use 10 point type, with a vertical spacing (leading) of 11 points.
3 The word **Abstract** must be centered, bold, and in point size 12. Two line spaces
4 precede the abstract. The abstract must be limited to one paragraph.

5 1 About the workshop

6 Many in the ML community wish to take action on climate change, but are unsure of the pathways
7 through which they can have the most impact. This workshop highlights work that demonstrates that,
8 while no silver bullet, ML can be an invaluable tool in reducing greenhouse gas emissions and in
9 helping society adapt to the effects of climate change. Climate change is a complex problem, for
10 which action takes many forms - from theoretical advances to deployment of new technology. Many
11 of these actions represent high-impact opportunities for real-world change, and are simultaneously
12 interesting academic research problems.

13 This workshop is part of a series (ICML 2021, NeurIPS 2020, ICLR 2020, NeurIPS 2019, and
14 ICML 2019). For this iteration of the workshop, the keynote talks and panel discussions will be
15 particularly focused on ML as an enabling technology for empowering decision-makers in tackling
16 climate change, though submitted works may be on any topic of relevance at the intersection of
17 climate change and machine learning.

18 2 Submission of papers

19 Electronic submissions are required, via this submission website:

20 <https://cmt3.research.microsoft.com/CCAINeurIPS2021/>

21 Please read the instructions below carefully and follow them faithfully.

22 3 Tracks

23 There are three tracks for submissions: **Papers, Proposals, and Tutorials**, each described in detail
24 below. Submissions are limited to **4 pages for the Papers track**, and **3 pages for the Proposals**
25 **track**. Tutorials do not have a page limit. References do not count towards this total. Supplementary
26 appendices are allowed but will be read at the discretion of the reviewers. All submissions must
27 explain why the proposed work has (or could have) positive impacts regarding climate change.

28 **3.0.1 Papers**

29 *Work that is in progress, published, and/or deployed.*

30 Submissions for the Papers track should describe projects relevant to climate change that involve
31 machine learning. These may include (but are not limited to) academic research; deployed results
32 from startups, industry, public institutions, etc.; and climate-relevant datasets.

33 Submissions should provide experimental or theoretical validation of the method presented, as well
34 as specifying what gap the method fills. Authors should clearly illustrate a pathway to climate impact,
35 i.e., identify the way in which this work fits into broader efforts to address climate change. Algorithms
36 need not be novel from a machine learning perspective if they are applied in a novel setting. Details of
37 methodology need not be revealed if they are proprietary, though transparency is highly encouraged.

38 Submissions creating novel datasets are welcomed. Datasets should be designed to permit machine
39 learning research (e.g. formatted with clear benchmarks for evaluation). In this case, baseline
40 experimental results on the dataset are preferred, but not required.

41 Submissions are limited to 4 pages. References do not count toward this total. Submissions are due
42 Sept. 18, 2021.

43 **3.0.2 Proposals**

44 *Early-stage work and detailed descriptions of ideas for future work.*

45 Submissions for the Proposals track should describe detailed ideas for how machine learning can
46 be used to solve climate-relevant problems. While less constrained than the Papers track, Proposals
47 will be subject to a very high standard of review. Ideas should be justified as extensively as possible,
48 including motivation for why the problem being solved is important in tackling climate change,
49 discussion of why current methods are inadequate, explanation of the proposed method, and discussion
50 of the pathway to climate impact. Preliminary results are optional.

51 Submissions are limited to 3 pages. References do not count toward this total. Submissions are due
52 Sept. 18, 2021.

53 **3.0.3 Tutorials**

54 *Interactive notebooks for insightful step-by-step walkthroughs.*

55 Submissions for the Tutorials track should introduce or demonstrate the use of ML methods and
56 tools such as libraries, packages, services, datasets, or frameworks to address a problem related to
57 climate change. Tutorial proposals (250 words, due Aug 15) should take the form of an abstract
58 and should include a clear and concise description of users' expected learning outcomes from the
59 tutorial. Accepted submissions (to be notified by Aug 22) will be given 6 weeks for the initial tutorial
60 development ("midterm" deadline Oct 4), after which tutorial creators will collaborate with the
61 Tutorials Team, who will review the tutorials periodically and provide iterative feedback, while the
62 creators continue to develop and improve their work over the course of another 8 weeks. Final tutorial
63 submissions (due Nov 21) should be in the form of executable notebooks (e.g. Jupyter, Colab) in a
64 hosted code environment.

65 **3.1 Style**

66 Papers must be prepared according to the instructions presented here. Submissions are limited to
67 **4 pages for the Papers track, and 3 pages for the Proposals track.** Tutorials do not have a page
68 limit. Papers that exceed these page limits will not be reviewed, or in any other way considered for
69 presentation at the workshop.

70 Authors are required to use the workshop style files (modified from the NeurIPS style files), obtainable
71 on the website as indicated below. Please make sure you use the current files and not previous versions.
72 Tweaking the style files may be grounds for rejection.

73 **3.2 Retrieval of style files**

74 The style files for this workshop are available on the World Wide Web at

75 http://climatechange.ai/files/TCCML_NeurIPS_2021_Style_File.zip

76 The file `tackling_climate_workshop.pdf` contains these instructions and illustrates the various
77 formatting requirements your paper must satisfy.

78 The file `tackling_climate_workshop.tex` may be used as a “shell” for writing your paper.
79 Alternatively, the file `tackling_climate_workshop.docx` can be used as well. Replace the author,
80 title, abstract, and text of the paper with your own. Please remember that at submission time your
81 document should be anonymized and the only accepted format is PDF.

82 The only supported style file for \LaTeX is `tackling_climate_workshop_style.sty`, rewritten for
83 \LaTeX 2 ϵ . **Previous style files for \LaTeX 2.09, or NeurIPS conference style file, are not accepted.**

84 The \LaTeX style file contains three optional arguments: `final`, which creates a camera-ready copy,
85 `preprint`, which creates a preprint for submission to, e.g., arXiv, and `nonatbib`, which will not
86 load the `natbib` package for you in case of package clash.

87 **Preprint option** If you wish to post a preprint of your work online, e.g., on arXiv, using the
88 workshop style, please use the `preprint` option. This will create a nonanonymized version of your
89 work with the text “Preprint. Work in progress.” in the footer. This version may be distributed as you
90 see fit. Please **do not** use the `final` option, which should **only** be used for papers accepted to the
91 workshop. Note that all workshops are non-archival; submission does not preclude future publication.

92 At submission time, please omit the `final` and `preprint` options. This will anonymize your
93 submission and add line numbers to aid review. Please *do not* refer to these line numbers in your
94 paper as they will be removed during generation of camera-ready copies.

95 The file `tackling_climate_workshop.tex` may be used as a “shell” for writing your paper.
96 Replace the author, title, abstract, and text of the paper with your own.

97 The formatting instructions contained in these style files are summarized in Sections 4, 5, and 6
98 below.

99 4 General formatting instructions

100 The text must be confined within a rectangle 5.5 inches (33 picas) wide and 9 inches (54 picas) long.
101 The left margin is 1.5 inch (9 picas). Use 10 point type with a vertical spacing (leading) of 11 points.
102 Times New Roman is the preferred typeface throughout, and will be selected for you by default.
103 Paragraphs are separated by $\frac{1}{2}$ line space (5.5 points), with no indentation.

104 The paper title should be 17 point, initial caps/lower case, bold, centered between two horizontal
105 rules. The top rule should be 4 points thick and the bottom rule should be 1 point thick. Allow $\frac{1}{4}$ inch
106 space above and below the title to rules. All pages should start at 1 inch (6 picas) from the top of the
107 page.

108 The version of the paper submitted for review should have “Anonymous Author(s)” as the author of
109 the paper. For the final version, authors’ names are set in boldface, and each name is centered above
110 the corresponding address. The lead author’s name is to be listed first (left-most), and the co-authors’
111 names (if different address) are set to follow. If there is only one co-author, list both author and
112 co-author side by side.

113 Please pay special attention to the instructions in Section 6 regarding figures, tables, acknowledgments,
114 and references.

115 5 Headings: first level

116 All headings should be lower case (except for first word and proper nouns), flush left, and bold.

117 First level headings are in point size 12. One line space before the first level heading and $\frac{1}{2}$ line space
118 after the first level heading.

119 **5.1 Headings: second level**

120 Second level headings are in point size 10. One line space before the second level heading and 1/2 line
121 space after the second level heading.

122 **5.1.1 Headings: third level**

123 Third level headings are in point size 10. One line space before the third level heading and 1/2 line
124 space after the third level heading.

125 **Paragraphs** In L^AT_EX there is also a `\paragraph` command available, which sets the heading in
126 bold, flush left, and inline with the text, with the heading followed by 1 em of space. If using this
127 style option in a docx file, please follow these instructions accordingly.

128 **6 Citations, figures, tables, references**

129 These instructions apply to everyone, regardless of the formatter being used.

130 **6.1 Citations within the text**

131 Citations within the text should be numbered consecutively. The corresponding number is to appear
132 enclosed in square brackets, such as [1] or [2]-[5]. The corresponding references are to be listed in
133 the same order at the end of the paper, in the **References** section. (Note: the standard B^IB^TE_X style
134 `unsrt` produces this.) As to the format of the references themselves, any standard reference style is
135 acceptable, as long as it is used consistently.

136 As submission is double blind, refer to your own published work in the third person. That is, use “In
137 the previous work of Jones et al. [4],” not “In our previous work [4].” If you cite your other papers
138 that are not widely available (e.g., a journal paper under review), use anonymous author names in the
139 citation, e.g., an author of the form “A. Anonymous.”

140 When using the L^AT_EX template, the `natbib` package will be loaded for you by default. Citations may
141 be author/year or numeric, as long as you maintain internal consistency.

142 For L^AT_EX use, note that the documentation for `natbib` may be found at

143 `http://mirrors.ctan.org/macros/latex/contrib/natbib/natnotes.pdf`

144 Of note is the command `\citet`, which produces citations appropriate for use in inline text. For
145 example,

146 `\citet{hasselmo}` investigated\dots

147 produces

148 Hasselmo, et al. (1995) investigated...

149 If you wish to load the `natbib` package with options, you may add the following before loading the
150 `neurips_2020` package:

151 `\PassOptionsToPackage{options}{natbib}`

152 If `natbib` clashes with another package you load, you can add the optional argument `nonatbib`
153 when loading the style file:

154 `\usepackage[nonatbib]{tackling_climate_workshop_style}`

155 **6.2 Footnotes**

156 Footnotes should be used sparingly. If you do require a footnote, indicate footnotes with a number¹
157 in the text. Place the footnotes at the bottom of the page on which they appear. Precede the footnote
158 with a horizontal rule of 2 inches (12 picas).

¹Sample of the first footnote.

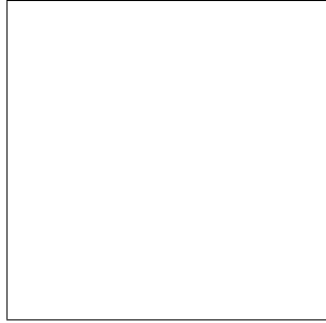


Figure 1: Sample figure caption.

Table 1: Sample table title

Part		
Name	Description	Size (μm)
Dendrite	Input terminal	~ 100
Axon	Output terminal	~ 10
Soma	Cell body	up to 10^6

159 Note that footnotes are properly typeset *after* punctuation marks.²

160 6.3 Figures

161 All artwork must be neat, clean, and legible. Lines should be dark enough for purposes of reproduction.
 162 The figure number and caption always appear after the figure. Place one line space before the figure
 163 caption and one line space after the figure. The figure caption should be lower case (except for first
 164 word and proper nouns); figures are numbered consecutively.

165 Make sure the figure caption does not get separated from the figure. Leave sufficient space to avoid
 166 splitting the figure and figure caption.

167 You may use color figures. However, it is best for the figure captions and the paper body to be legible
 168 if the paper is printed in either black/white or in color, and that colormaps consider accessibility to
 169 the visually impaired (e.g. red/green colorblindness).

170 6.4 Tables

171 All tables must be centered, neat, clean and legible. The table number and title always appear before
 172 the table. See Table 1.

173 Place one line space before the table title, one line space after the table title, and one line space after
 174 the table. The table title must be lower case (except for first word and proper nouns); tables are
 175 numbered consecutively.

176 Note that publication-quality tables *do not contain vertical rules*. We strongly suggest the use of the
 177 booktabs package, which allows for typesetting high-quality, professional tables:

178 `https://www.ctan.org/pkg/booktabs`

179 This package was used to typeset Table 1.

²As in this example.

7 Final instructions

Do not change any aspects of the formatting parameters in the style files. In particular, do not modify the width or length of the rectangle the text should fit into, and do not change font sizes (except perhaps in the **References** section; see below). Please note that pages should be numbered.

8 Preparing PDF files

Please prepare submission files with paper size “US Letter,” and not, for example, “A4.”

Fonts were the main cause of problems in the past years. Your PDF file must only contain Type 1 or Embedded TrueType fonts. Here are a few instructions to achieve this.

- For MSWord users: from the print menu, click the PDF drop-down box, and select "Save as PDF...".
- For \LaTeX users: you should directly generate PDF files using `pdflatex`.
- You can check which fonts a PDF file uses. In Acrobat Reader, select the menu Files>Document Properties>Fonts and select Show All Fonts. You can also use the program `pdf fonts` which comes with `xpdf` and is available out-of-the-box on most Linux machines.
- The IEEE has recommendations for generating PDF files whose fonts are also acceptable for NeurIPS. Please see <http://www.emfield.org/icuwb2010/downloads/IEEE-PDF-SpecV32.pdf>
- `xfig` "patterned" shapes are implemented with bitmap fonts. Use "solid" shapes instead.
- The `\bbold` package almost always uses bitmap fonts. You should use the equivalent AMS Fonts:

```
\usepackage{amsfonts}
```

followed by, e.g., `\mathbb{R}`, `\mathbb{N}`, or `\mathbb{C}` for \mathbb{R} , \mathbb{N} or \mathbb{C} . You can also use the following workaround for reals, natural and complex:

```
\newcommand{\RR}{\mathbb{R}} %real numbers
\newcommand{\Nat}{\mathbb{N}} %natural numbers
\newcommand{\CC}{\mathbb{C}} %complex numbers
```

Note that `amsfonts` is automatically loaded by the `amssymb` package.

If your file contains type 3 fonts or non embedded TrueType fonts, we will ask you to fix it.

8.1 Margins in \LaTeX

With \LaTeX most of the margin problems come from figures positioned by hand using `\special` or other commands. We suggest using the command `\includegraphics` from the `graphicx` package. Always specify the figure width as a multiple of the line width as in the example below:

```
\usepackage[pdftex]{graphicx} ...
\includegraphics[width=0.8\linewidth]{myfile.pdf}
```

See Section 4.4 in the graphics bundle documentation (<http://mirrors.ctan.org/macros/latex/required/graphics/grfguide.pdf>)

A number of width problems arise when \LaTeX cannot properly hyphenate a line. Please give LaTeX hyphenation hints using the `\-` command when necessary.

References

References follow the acknowledgments. Use unnumbered first-level heading for the references. Any choice of citation style is acceptable as long as you are consistent. It is permissible to reduce the font size to small (9 point) when listing the references. **Note that the Reference section does not**

222 **count towards the pages of content that are allowed; 4 pages for Papers track and 3 pages for**
223 **Proposals track.**

224 [1] Alexander, J.A. & Mozer, M.C. (1995) Template-based algorithms for connectionist rule extraction. In
225 G. Tesauro, D.S. Touretzky and T.K. Leen (eds.), *Advances in Neural Information Processing Systems 7*, pp.
226 609–616. Cambridge, MA: MIT Press.

227 [2] Bower, J.M. & Beeman, D. (1995) *The Book of GENESIS: Exploring Realistic Neural Models with the*
228 *GENeral NEural Simulation System*. New York: TELOS/Springer-Verlag.

229 [3] Hasselmo, M.E., Schnell, E. & Barkai, E. (1995) Dynamics of learning and recall at excitatory recurrent
230 synapses and cholinergic modulation in rat hippocampal region CA3. *Journal of Neuroscience* **15**(7):5249-5262.