How to format your workshop paper

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Abstract

A clear and well-documented LaTeX document is presented as an article formatted for publication your workshop paper in the CEUR Workshop Proceedings (CEUR-WS). Based on the "ceurart" document class, this article presents and explains many of the common variations, as well as many of the formatting elements an author may use in the preparation of the documentation of their work.

Keywords

LaTeX class, paper template, paper formatting, CEUR-WS

1. On the LaTeX

You can freely use any LaTeX compatible typesetting system (e.g., TeXStudio + TexLive is a good choice for any operating systems), but if you don't to be involved into the LaTeX system administration, we propose to use a cloud based LaTeX editors like Overleaf (www.overleaf.com). After registering at www.overleaf.com, you can start your paper revision with this template using 'New Project' – 'Upload Project' menu (figure 1).

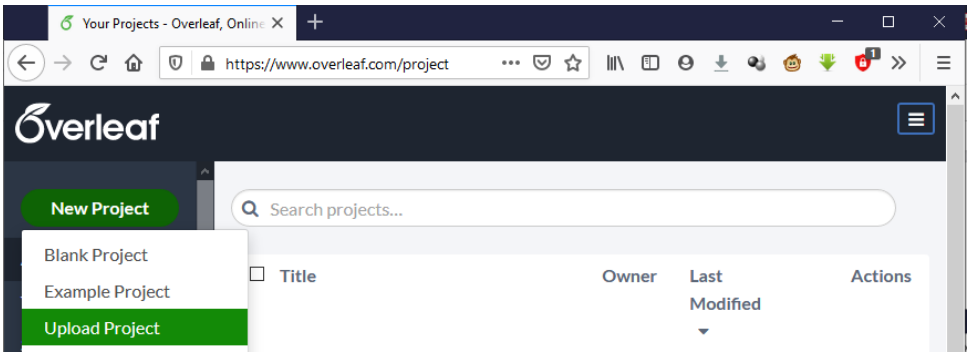

Figure 1: How to upload your project to Overleaf.

The next step is to select the template archive (figure 2).

To get a camera-ready version of your paper in PDF, you can click to "Download PDF" icon or use 'Menu' to download both LaTeX source files (ZIP) and camera-ready version (PDF) (figure 3).

The most-often recommended tutorial is the '(Not So) Short Guide to LaTeX2ε' (https://www.ctan.org/tex-archive/info/lshort/).

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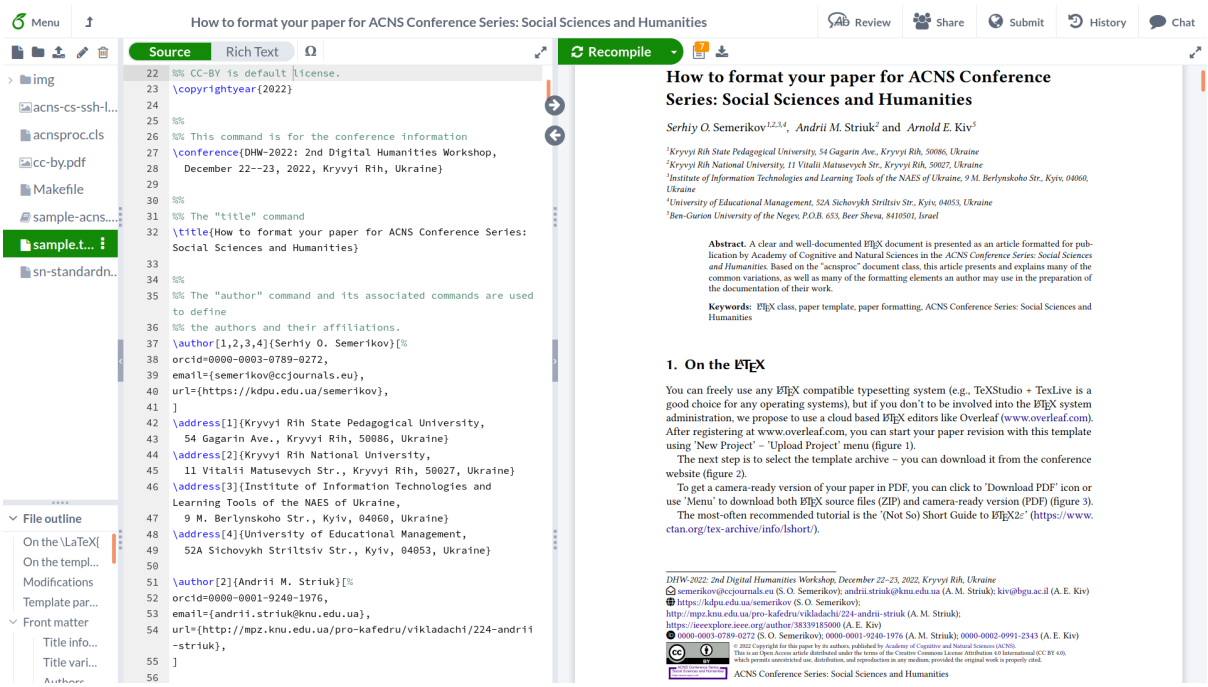

Figure 2: Overleaf, online LaTeX editor.

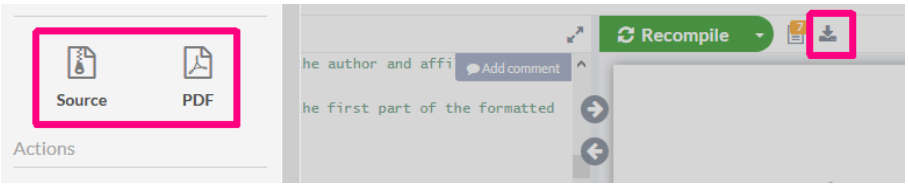

Figure 3: How to download your project from Overleaf.

2. On the template

This proceedings article template provides a consistent LaTeX style for use across workshop publications, and incorporates accessibility and metadata-extraction functionality. This document will explain the major features of the document class[1].

If you are new to publishing with CEUR-WS, this document is a valuable guide to the process of preparing your work for publication.

The "`ceurart.cls`" document class can be used to prepare articles for any CEUR-WS publication, and for any stage of publication, from review to final "camera-ready" copy with *very* few changes to the source.

This class depends on the following packages for its proper functioning:

- `natbib.sty` for citation processing;
- `geometry.sty` for margin settings;
- `graphicx.sty` for graphics inclusion;
- `hyperref.sty` optional package if hyperlinking is required in the document;
- `fontawesome5.sty` optional package for bells and whistles.

All the above packages are part of any standard LaTeX installation. Therefore, the users need not be bothered about downloading any extra packages.

[1]You can use this document as the template for preparing your publication. We recommend using the latest version of the ceurart style.

An extra files `ceur-ws-logo.pdf` and `cc-by.pdf` are provides the logotypes of CEUR-WS and CC BY 4.0 respectively.

3. Modifications

Modifying the template — including but not limited to: adjusting margins, typeface sizes, line spacing, paragraph and list definitions, and the use of the `\vspace` command to manually adjust the vertical spacing between elements of your work — is not allowed.

4. Front matter

4.1. Title information

The titles of papers should be either all use the regular English style. It does not make a good impression if you or your authors mix the styles.

Use the `\title` command to define the title of your work. Do not insert line breaks in your title.

4.2. Title variants

`\title` command have the below options:

- `title`: Document title. This is default option.

  ```
  \title[mode=title]{This is a title}
  ```

  You can just omit it, like as follows:

  ```
  \title{This is a title}
  ```

- `sub`: Sub title.

  ```
  \title[mode=sub]{This is a sub title}
  ```

  You can just use `\subtitle` command, as follows:

  ```
  \subtitle{This is a sub title}
  ```

4.3. Authors and affiliations

Each author must be defined separately for accurate metadata identification. Multiple authors may share one affiliation. Authors' names should not be abbreviated; use full first names wherever possible. Include authors' e-mail addresses whenever possible.

`\author` command have the below options:

- `orcid`: ORCID
- `email`: E-mail
- `url`: URL

Author names can have some kinds of marks and notes:

- affiliation mark: `\author[<num>]`
- email: `\ead{<email>}`
- url: `\ead[url]{<url>}`

The author names and affiliations could be formatted in two ways:

1. Group the authors per affiliation.

2. Use an explicit mark to indicate the affiliations.

Author block example:

```
\author[1,2]{Author Name}[%
    orcid=0000-0000-000-0000,
    email={name@example.com},
    url={https://name.example.com}
]

\address[1]{Affiliation #1}
\address[2]{Affiliation #2}
```

4.4. Abstract and keywords

Abstract shall be entered in an environment that starts with `\begin{abstract}` and ends with `\end{abstract}`.

```
\begin{abstract}
  This is an abstract.
\end{abstract}
```

The key words are enclosed in a `keywords` environment. Use `\sep` to separate keywords.

```
\begin{keywords}
  First keyword \sep
  Second keyword \sep
  Third keyword \sep
  Fourth keyword
\end{keywords}
```

At the end of front matter add `\maketitle` command.

5. Sectioning commands

Your work should use standard LaTeX sectioning commands: `\section`, `\subsection`, `\subsubsection`, and `\paragraph`. They should be numbered; do not remove the numbering from the commands.

Simulating a sectioning command by setting the first word or words of a paragraph in boldface or italicized text is not allowed.

6. Tables

The "`acnsproc`" document class includes the "`booktabs`" package — https://ctan.org/pkg/booktabs — for preparing high-quality tables.

Tables should be numbered sequentially throughout the text and referred to in the text by number (table 1, etc, **rather than** tab. 1). Each table should be a float and be positioned within the text at the most convenient place near to where it is first mentioned in the text. It should have an explanatory caption which should be as concise as possible. Table captions are placed *above* the table.

Because tables cannot be split across pages, the best placement for them is typically the top of the page nearest their initial cite. To ensure this proper "floating" placement of tables, use the environment `table` to enclose the table's contents and the table caption. The contents of the table itself must go in the `tabular` environment, to be aligned properly in rows and columns, with the desired horizontal and vertical rules.

Table 1
Frequency of special characters.

Non-English or Math	Frequency	Comments
Ø	1 in 1,000	For Swedish names
π	1 in 5	Common in math
$	4 in 5	Used in business
Ψ_1^2	1 in 40,000	Unexplained usage

Immediately following this sentence is the point at which table 1 is included in the input file; compare the placement of the table here with the table in the printed output of this document.

You can find a lot of examples at *Overleaf documentation on tables*.

7. Math equations

You may want to display math equations in three distinct styles: inline, numbered or non-numbered display. Each of the three are discussed in the next sections.

Equations may be numbered sequentially throughout the text (i.e., (1), (2), (3), ...) or numbered by section (i.e., (1.1), (1.2), (2.1), ...) depending on the author's personal preference. In articles with several appendices equation numbering by section is useful in the appendices even when sequential numbering has been used throughout the main body of the text: for example, A.1, A.2 and so forth. When referring to an equation in the text, always put the equation number in brackets – e.g. 'as in equation (2)' or 'as in equation (2.1)' – and always spell out the word 'equation' in full, e.g. 'if equation (5) is factorized'; do not use abbreviations such as 'eqn.' or 'eq.'.

7.1. Inline (in-text) equations

A formula that appears in the running text is called an inline or in-text formula. It is produced by the `math` environment, which can be invoked with the usual `\begin` ... `\end` construction or with the short form `$` ... `$`. You can use any of the symbols and structures, from α to ω; this section will simply show a few examples of in-text equations in context. Notice how this equation: $\lim_{n\rightarrow \infty} \frac{1}{n} = 0$, set here in in-line math style, looks slightly different when set in display style. (See next subsection).

7.2. Display equations

A numbered display equation – one set off by vertical space from the text and centered horizontally – is produced by the `equation` environment. An unnumbered display equation is produced by the `displaymath` environment (or `equation*` with `amsmath` package).

Again, in either environment, you can use any of the symbols and structures available in LaTeX; this section will just give a couple of examples of display equations in context. First, consider the equation, shown as an inline equation above:

```
\begin{equation}
\lim_{n\rightarrow \infty} \frac{1}{n} = 0.
\end{equation}
```

$$\lim_{n\rightarrow \infty} \frac{1}{n} = 0. \tag{1}$$

Notice how it is formatted somewhat differently in the `displaymath` environment. Now, we'll enter an unnumbered equation:

```
\begin{displaymath}
S_{n} = \sum_{i=1}^{n} x_{i} ,
\end{displaymath}
```

$$S_n = \sum_{i=1}^{n} x_i,$$

and follow it with another numbered equation:

```
\begin{equation}\label{lim}
\lim_{x \to 0} (1 + x)^{1/x} = e
\end{equation}
```

$$\lim_{x \to 0} (1 + x)^{1/x} = e \tag{2}$$

just to demonstrate LaTeX's able handling of numbering.

Usually, equations should be centred and should be numbered with the number on the right-hand side. (You can find an additional examples of alignment at *Overleaf documentation on aligning equations with amsmath*).

Using `\label{equation}` you can refer to corresponding equation (e.g., equation (2)) by number.

8. Figures

Figures must be included in the source code of an article at the appropriate place in the text not grouped together at the end.

Each figure should have a brief caption describing it and, if necessary, interpreting the various lines and symbols on the figure. As much lettering as possible should be removed from the figure itself and included in the caption. If a figure has parts, these should be labelled (a), (b), (c), etc.

Authors should try and use the space allocated to them as economically as possible. Place the figure as close as possible after the point where it is first referenced in the text. If there are a large number of figures it might be necessary to place some before their text citation. Figures should never appear within or after the reference list.

Individual figures should normally be centred but place two figures side-by-side if they will fit comfortably like this as it saves space. At times it may be convenient to put two figures side by side or the caption at the side of a figure. To put figures side by side, within a figure environment, put each figure and its caption into a minipage with an appropriate width (e.g. 3in or 18pc if the figures are of equal size) and then separate the figures slightly by adding some horizontal space between the two minipages (e.g. `\hspace{.2in}` or `\hspace{1.5pc}`. To get the caption at the side of the figure add the small horizontal space after the `\includegraphics` command and then put the `\caption` within a minipage of the appropriate width aligned bottom, i.e. `\begin{minipage}[b]{3in}` etc.

The "`figure`" environment should be used for figures. One or more images can be placed within a figure.

Your figures should contain a caption which describes the figure to the reader (see figure 6). Figure captions go below the figure. Your figures should also include a description suitable for screen readers, to assist the visually-challenged to better understand your work.

For figures with fixed position in text use syntax of figure 6:

```
\begin{figure}[h]
\centering
\includegraphics[width=0.75\linewidth]{img/example-franklin}
\caption{1907 Franklin Model D roadster.}
\label{fig-0}
\end{figure}
```

If a figure has parts these should be labelled as (a), (b), (c) etc on the actual figure. Parts should not have separate captions (see figure 7).

Figure 4: Figure caption for first of two sided figures.

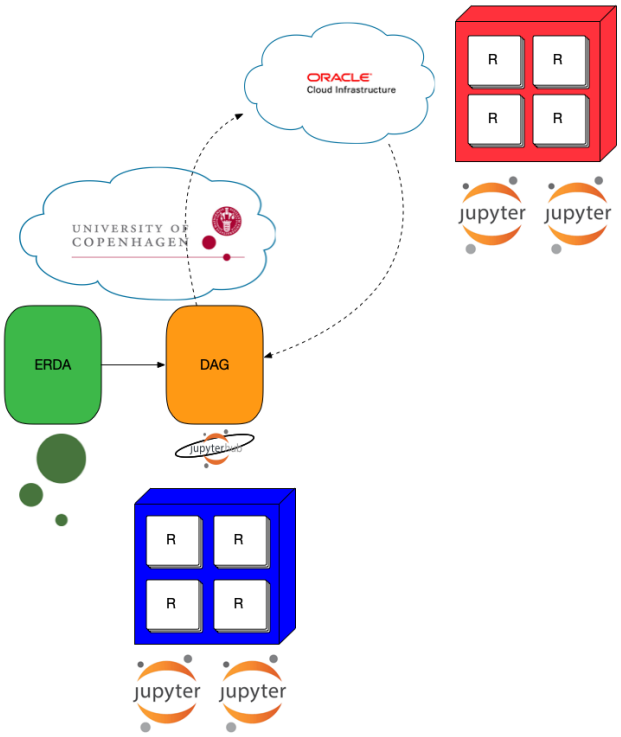

Figure 5: Figure caption for second of two sided figures.

```
\begin{figure}[t]
\begin{center}
\begin{minipage}[b]{0.47\columnwidth}
\includegraphics[width=1\columnwidth]{img/name.eps}
\begin{center}(a)\end{center}
\end{minipage}
\hspace{0.04\columnwidth}
\begin{minipage}[b]{0.47\columnwidth}
\includegraphics[width=1\columnwidth]{img/name.eps}
\begin{center}(b)\end{center}
\end{minipage}
\end{center}
\caption{\label{fig5}A caption of figure of two parts, (a) and (b).}
\end{figure}
```

8.1. Colour illustrations

You are free to use colour illustrations.

8.1.1. Remark

Use over 300 dpi resolution for your figures (we prefer 600 dpi).

One more remark Don't use the lossy compressed images (e.g., JPEG).

Figure 6: Mrs. F. S. Bliven in auto (circa 1908).

9. Citations and bibliographies

References should be cited in the text by placing sequential numbers in brackets using `\cite` (for example, [1], [2, 3, 4]) and `\citet` (for example, Spirin [5], Osadcha and Osadchyi [6], Vakaliuk et al. [7]). A complete reference should provide enough information to locate the article. The terms *loc. cit.* and *ibid.* should not be used.

Unpublished conferences and reports should generally not be included in the reference list and articles in the course of publication should be entered only if the journal of publication is known.

A thesis submitted for a higher degree may be included in the reference list if it has not been superseded by a published paper and is available through a library; sufficient information should be given for it to be traced readily.

9.1. Formatting reference lists

The use of BibTEX for the preparation and formatting of one's references is **mandatory**.

The bibliography is included in your source document with this command, placed just before the `\end{document}` command:

```
\bibliography{bibfile}
```

where "`bibfile`" is the name, without the "`.bib`" suffix, of the BibTEX file.

reserved for figure

(a)

reserved for figure

(b)

Figure 7: A caption of figure of two parts, (a) and (b).

10. Bibliographic data fields

10.1. References to printed journal articles

A normal reference to a journal article is constructed as follows [8]:

```
@article{Striuk_2022,
  title={Formation of software design skills among
         software engineering students},
  volume={58},
  DOI={10.31812/educdim.4519},
  journal={Educational Dimension},
  author={Striuk, Andrii},
  year={2022},
  month={Jun.},
  pages={1-21}
}
```

10.2. References to CEUR-WS articles

Each conference proceeding published in CEUR-WS will be a separate *volume*; references should follow the style for conventional printed journals. For example [9]:

```
@article{DBLP:conf/aredu/SemerikovMM21,
  author = {Serhiy O. Semerikov and
            Mykhailo M. Mintii and Iryna S. Mintii},
  title = {Review of the course {‘‘Development of Virtual
           and Augmented Reality Software’’} for {STEM} teachers:
           implementation results and improvement potentials},
  journal    = {{CEUR Workshop Proceedings}},
  volume    = {2898},
```

```
  pages     = {159-177},
  year      = {2021},
  url       = {http://ceur-ws.org/Vol-2898/paper09.pdf},
}
```

CEUR-WS papers listed in DBLP (https://dblp.org/) can be cited as follows

```
@inproceedings{DBLP:conf/aredu/SemerikovMM21,
  author = {Serhiy O. Semerikov and
            Mykhailo M. Mintii and Iryna S. Mintii},
  editor = {Svitlana H. Lytvynova and Serhiy O. Semerikov},
  title = {Review of the course {``Development of Virtual
           and Augmented Reality Software''} for {STEM} teachers:
           implementation results and improvement potentials},
  booktitle = {{Proceedings of the 4th International Workshop on
                Augmented Reality in Education (AREdu 2021),
                Kryvyi Rih, Ukraine, May 11, 2021}},
  series    = {{CEUR Workshop Proceedings}},
  volume    = {2898},
  pages     = {159--177},
  publisher = {CEUR-WS.org},
  year      = {2021},
  url       = {http://ceur-ws.org/Vol-2898/paper09.pdf},
}
```

10.3. References to books, conference proceedings and reports

References to books, proceedings and reports are similar to journal references:

- Complete book

```
@book{Morkun,
author = {Vladimir Morkun and Serhiy Semerikov
and Svitlana Hryshchenko},
title = {Methods of Using Geoinformation Technologies
in Mining Engineers' Training},
year = {2018},
publisher = {Cambridge Scholars Publishing},
address = {Newcastle upon Tyne},
url={https://www.cambridgescholars.com/product/978-1-5275-1615-1}
}
```

- Book in series

```
@book{Dirac:1958,
author = {P. A. M. Dirac},
title = {The Principles of Quantum Mechanics},
series = {The International Series of Monographs on Physics},
number = {27},
edition = {4},
publisher = {Clarendon Press},
address = {Oxford},
year = {1967}
}
```

- Book chapter or some part of book

```
@inbook{Humboldt:ch1,
publisher = {Cambridge University Press},
year = {1999},
title = {{On Language: On the Diversity of Human Language
 Construction and its Influence on the Mental Development
 of the Human Species}},
series={{Cambridge Texts in the History of Philosophy}},
author = {Wilhelm {Von Humboldt}},
editor={Michael Losonsky},
chapter={1},
pages={11-22},
}
```

(You can also cite any part of book using `\cite[pp.~110--113]{Dirac:1958}` or `\cite[chapter 4, pp.~9`

- Authored chapter

```
@Incollection{Shramko2016,
author="Shramko, Yaroslav",
editor="Bimb{\'o}, Katalin",
title={{Truth, Falsehood, Information and Beyond:
       The American Plan Generalized}},
bookTitle={{J. Michael Dunn on Information Based Logics}},
year="2016",
publisher="Springer International Publishing",
address="Cham",
pages="191--212",
isbn="978-3-319-29300-4",
doi="10.1007/978-3-319-29300-4_11",
}
```

- Article in conference proceedings

```
@inproceedings{DBLP:conf/dhw/SemerikovMM21,
author    = {Serhiy O. Semerikov and
Iryna S. Mintii and
Rusudan K. Makhachashvili},
title     = {Digital Humanities Event Horizon},
booktitle = {{DHW} 2021: Digital Humanities Workshop,
             Kyiv, Ukraine, 23 December 2021},
pages     = {1-28},
publisher = {{ACM}},
year      = {2021},
doi       = {10.1145/3526242.3526243},
}
```

or `@conference` or `@incollection`.

10.4. A case of non-Latin source

When non-Latin alphabet publication cited, the title of the publication (e.g., book or article) in the original language need to be both transliterated and translated in English. Other bibliographic components (including authors, publisher, address and journal name) are transliterated only [1]:

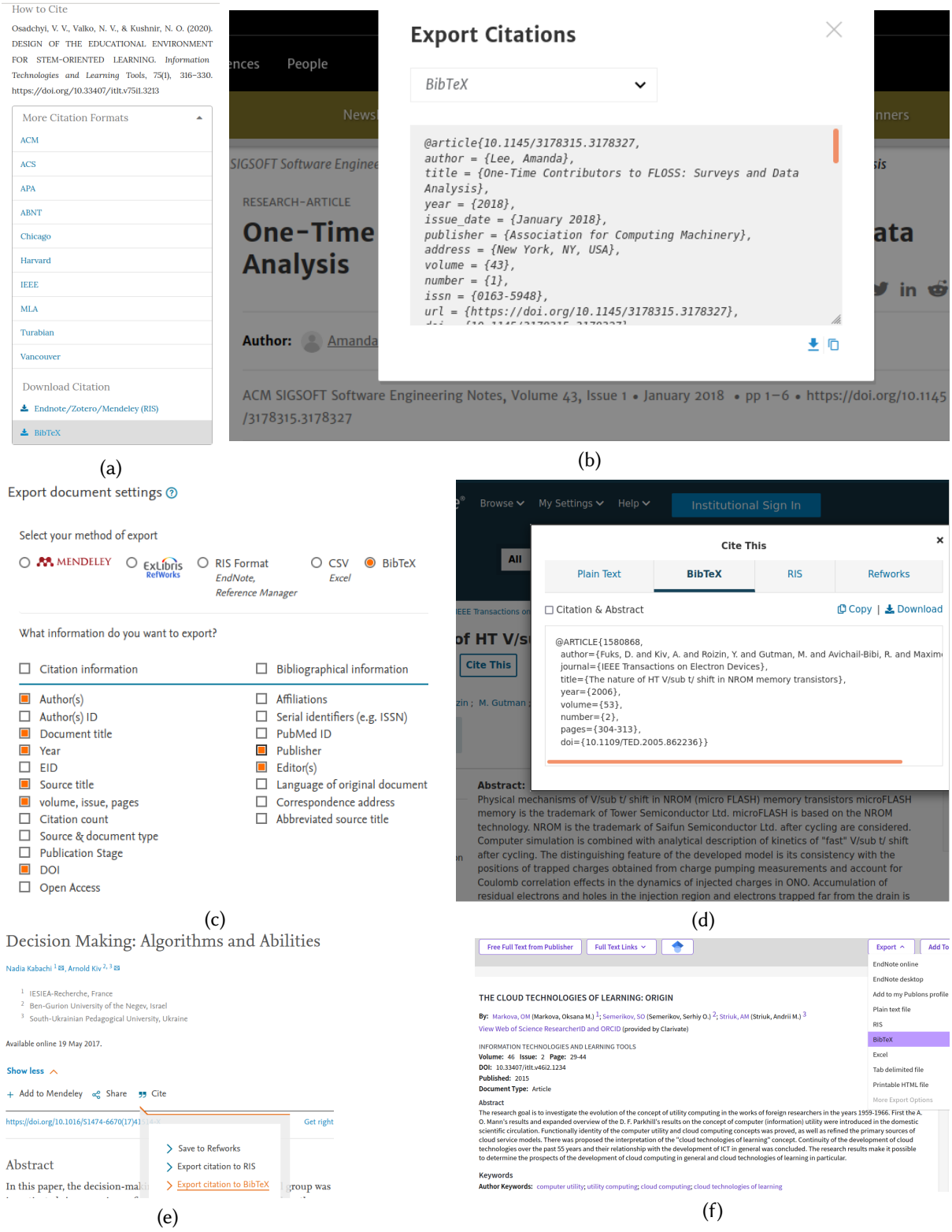

Figure 8: Export citations into a BibTeX file.

```
@article{IA2000,
author ={Semerikov, S. O. and Soloviov, V. M. and Teplytskyi, I. O.},
year=2000,
title= {Instrumentalne zabezpechennia kursu kompiuternoho modeliuvannia
        [{I}nstrumental support of the course of computer modeling]},
```

```
journal= {Kompiuter u shkoli i simi},
number=4,
pages={28-31},
url={https://lib.iitta.gov.ua/704129/}
}
```

10.5. Best practices: export citations into a BibTEX file

A good way to make your bibliography is to exclude manual creation bibliography items whenever it possible. We strongly recommend to use the "Cite" (export) facilities to BibTEX which available in the most of OJS installations (figure 8a), ACM Digital Library (figure 8b), Scopus (figure 8c), IEEE Xplore (figure 8d), ScienceDirect (figure 8e), Web of Science (figure 8f) etc.

10.6. Some examples

A paginated journal article [2], an enumerated journal article [10, 11], a monograph (whole book) [3], a monograph/whole book in a series [12], a divisible-book such as an anthology or compilation [4] followed by the same example, however we only output the series if the volume number is given [13] (so series should not be present since it has no volume number), a chapter in a divisible book [14], a chapter in a divisible book in a series [15], a multi-volume work as book [16], an article in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [17, 18], a proceedings article with all possible elements [19], an informally published work [20], a doctoral dissertation [21], a master's thesis: [22], an online document / world wide web resource [23, 24, 25], a video game (Case 1) [26] and (Case 2) [27] and [28] and (Case 3) a patent [29], work accepted for publication [30]. Multi-volume works as books [31] and [32]. A couple of citations with DOIs: [33, 34]. Online citations: [35, 23, 36, 37].

A lot of citations with `\cite`: [38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64].

Same citations with `\citet`: Shramko and Rossman [38], Zhaldak [39], Kiv et al. [40], Shramko and Wansing [41], Descartes [42], Plato [43], Teplytskyi [44], Zhaldak [45], Shramko [46], Osadchyi et al. [47], Puu and Sushko [48], Russell [49], Koryakova and Epimakhov [50], Semerikov et al. [51], Trius et al. [52], Konoplya [53], Morkun et al. [54], Saptsin and Soloviev [55], Kalitkin and Kuz'mina [56], Haveman and Gualtieri [57], Kerley [58], Sutherland [59], Von Humboldt [60], Shramko [61], Dirac [62], Tkachuk et al. [63], Goncharov et al. [64].

11. Ethical disclaimers

A disclaimer is a note of disclaimer of responsibility. For example, authors' statements about conflicts of interest, author contributions, acknowledgements, etc.

Authors should not prepare these disclaimers as a numbered or unnumbered `\section`; please use the special environments instead.

11.1. Author contributions

The Committee on Publication Ethics (COPE) draws attention to the problem of authorship [65]. The CRediT system (https://credit.niso.org/) is proposed to formalize author roles. The CRediT (Contributor Roles Taxonomy) offers 14 possible author roles [66]. This is not really a taxonomy, but a faceted classification. Author roles are not always independent in themselves.

The following statements should be used *Conceptualization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft preparation, X.X.; writing—review and editing, X.X.; visualization, X.X.;*

supervision, X.X.; project administration, X.X.; funding acquisition, Y.Y. Please add at the end of the statement: *All authors have read and agreed to the published version of the manuscript.*

This section has a special environment:

```
\begin{authorcontributions}
. . .
\end{authorcontributions}
```

11.2. Funding

Disclaimer *funding* refers primarily to external funding if the research was externally initiated. If the research is entirely the initiative of the author's team, it is better to indicate gratitude for partial funding of some of the stages of the research in the *Acknowledgments* section. The fact that the author's team has received external funding should be recorded in the disclaimer as a matter of course. When mentioning the sponsor, its exact data (name of the organization, grant number, etc.) and the country of its location should be specified (for example *This research was funded by NAME OF FUNDER grant number XXX*). If there is any support, it is recommended to clarify in the *Conflicts of interest* section at which stages of the research and how the support was used. If there is no external funding, it is written: *This research received no external funding.* If it is impossible to obtain information from the authors about the source of funding, then write: *Not specified.*

This section has a special environment:

```
\begin{funding}
. . .
\end{funding}
```

11.3. Data availability statement

Data are particularly important in reproducible researches. The data availability statement tells the reader where the research data related to the article are located and under what conditions the data can be accessed. References to the dataset are also provided.

If no new data is created or analyzed, please write: *No new data were created or analyzed in this study. Data sharing is not applicable.*

This section has a special environment:

```
\begin{dataavailability}
. . .
\end{dataavailability}
```

11.4. Conflicts of interest

This disclaimer must be included.

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We acknowledge Covidpocalypse 2019 for making the
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11.6. Declaration on Generative AI

Generative AI can support the drafting of a paper but never supplant it, and should be used responsibly.

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A sample of acceptable use cases of GenAI within ACNS publications are exemplified here, alongside notable exceptions where their employment would be deemed unacceptable, are listed in table 2.

Authors are hereby required to declare and detail the specific contributions of any GenAI tools and services used in the preparation of their work. This ensures transparency and provides readers, and editors with a clear understanding of the role GenAI played in the production of the published work.

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- **Tools and services**: a complete listing of all GenAI tools and services employed.
- **Tools' contributions**: a precise description of the specific contributions made by each GenAI tool or service, categorised in accordance with the established GenAI Usage Taxonomy.

GenAI Usage Taxonomy by CEUR-WS (https://ceur-ws.org/GenAI/Taxonomy.html, table 3) is a 13-role taxonomy describing how GenAI contributed to the production and publication of research articles.

The Declaration on generative AI statement should be provided during the submission process and will appear above the References section of the published paper.

Table 2
Acceptable and unacceptable cases.

Use case	Acceptable	Unacceptable
Text creation	While GenAI can assist with writer's block or retrieving definitions, its use should be contingent upon human critical thinking and judgment to ensure accuracy and originality.	Using GenAI to generate new text, such as paragraphs, or even entire sections of a paper is ethically unacceptable. Academic writing must be original and attributed to human authors.
Text translation	This involves using GenAI to translate text from another language into English or vice versa.	Employing GenAI to translate a previously published work into English, without subsequent editorial refinement, raises ethical concerns about self-plagiarism.
Sentence polishing	GenAI can be used to identify and correct grammatical errors, typos, and other writing mistakes. This helps improve the clarity and professionalism of your writing.	GenAI's ability to process large textual data allows it to seemingly process minor sentences to whole paragraphs. Refining whole paragraphs without human critical thinking and judgment can perpetuate biases from its training data and erode the author's narrative voice.
Image creation	GenAI can create images based on text prompts. This is acceptable only when the paper's core topic is about automatic image generation.	Employing GenAI to create visual aids, such as diagrams, charts, and illustrations is unacceptable. The generated output is often nonsensical, and hinder the quality, trustworthiness, and value of scientific papers.
Rephrasing	GenAI can help you rephrase sentences or paragraphs to improve clarity, conciseness, or style. This can be helpful for expressing ideas in a more sophisticated way.	As stated for sentence polishing, rephrasing without human oversight can perpetuate biases from its training data and erode the author's narrative voice.

Table 3
GenAI Usage Taxonomy by CEUR-WS.

Contribution	Description
Drafting content	AI can help you write different sections of your paper, such as introductions, literature reviews, or methodology descriptions
Generate images	AI can help you generate images for your paper
Text translation	AI can help you in translating your work or reaching a broader audience
Generate literature review	AI can help you drafting a literature review section starting from a set of relevant papers
Paraphrase and reword	AI can help you express ideas in different ways, ensuring clarity and conciseness
Improve writing style	AI can offer suggestions for sentence structure, word choice, and overall flow
Abstract drafting	AI can draft a concise abstract that captures the gist of your research
Grammar and spelling check	AI can catch errors that you might have missed
Plagiarism detection	AI can help you identify potential plagiarism issues in your own writing
Citation management	AI can help format citations and references according to specific styles (e.g., APA, MLA)
Formatting assistance	AI can ensure your paper adheres to specific formatting guidelines required by journals or institutions
Peer review simulation	AI can simulate peer review by providing feedback on the strengths and weaknesses of your paper
Content enhancement	AI can suggest additional content or research that could strengthen your arguments

Either: *The author(s) have not employed any generative AI tools.*
or (by using the activity taxonomy in table 3): *During the preparation of this work, the author(s) used*

X-GPT-4 and Gramby in order to: Grammar and spelling check. Further, the author(s) used X-AI-IMG for figures 3 and 4 in order to: Generate images. After using these tool(s)/service(s), the author(s) reviewed and edited the content as needed and take(s) full responsibility for the publication's content.

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Author contributions

Conceptualization, Serhiy O. Semerikov and Andrii M. Striuk; methodology, Serhiy O. Semerikov; software, Andrii M. Striuk; writing – original draft, Serhiy O. Semerikov; writing—review and editing, Andrii M. Striuk. All authors have read and agreed to the published version of the manuscript.

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Data availability statement

No new data were created or analysed during this study. Data sharing is not applicable.

Conflicts of interest

The authors declare no conflict of interest.

Acknowledgments

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Declaration on Generative AI

The authors have not employed any generative AI tools.

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A. Appendix

If your work needs an appendix, add it before the "`\end{document}`" command at the conclusion of your source document.

Start the appendix with the "`\appendix`" command:

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and note that in the appendix, sections are lettered, not numbered.