

# Simulation of Bandwidth-Efficient Federated Learning Architectures for Resource-Constrained Agricultural Networks in Indonesia

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## Abstract

Abstract should be written in English. The abstract is written with Times New Roman font size 10, and single spacing. The abstract should summarize the content of the paper, including the aim of the research, research method, and the results, and the conclusions of the paper. It should not contain any references or displayed equations. The abstract should be no more than 200 words.

**Keywords:** *up to 5 keywords in English*

## 1. Introduction

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The manuscript is written with Times New Roman font size 10, single-spaced, left and right aligned, one one-sided pages and on A4 paper (210 mm x 297 mm) with the upper margin of 3 cm, lower margin 3 cm, left and right 3 and 3 cm based on odd and even pages. The manuscript including the graphic contents and tables should be between 6 to 15 pages. The manuscript is written in English. The Standard English grammar must be observed. The title of the article should be brief and informative and it should not exceed 20 words. The keywords are written after the abstract.

The first letter of headings is capitalized and headings are numbered in Arabic numerals. The organization of the manuscript includes Introduction, Methodology, Results and Analysis, Conclusion and References. Acknowledgement (if any) is written after Conclusion and before References and not numbered. The use of subheadings is discouraged.

The use of abbreviation is permitted, but the abbreviation must be written in full and complete when

it is mentioned for the first time and it should be written between parentheses. Terms/foreign words or regional words should be written in italics. Notations should be brief and clear and written according to the standardized writing style. Symbols/signs should be clear and distinguishable, such as the use of number 1 and letter l (also number 0 and letter O). In this manuscript doesn't allow to use bullet and numbering. At the end of this paper both of the columns should be in balance. You also have to activate widow or orphan control in order to ensure that there are no single line of sentence at the end of column section.

## 2. Tables

Tables are written with Times New Roman font size 8. The title of the table is written with font size 8 above the table without blank space. The table is numbered in Arabic numerals. There is one single space line between the table and the paragraph. The table is placed immediately after it is referred to in the text. The frame of the table uses 1 font-size line. If the title in each table column is long and complex, the columns are numbered and the notes are given below the table.

**Table 1.** Caption of Table in each table if is column is long and complex, the columns are numbered and the notes are given below the table.

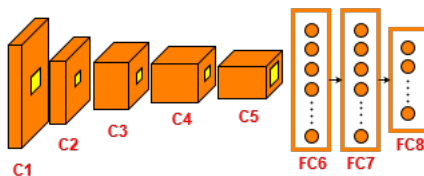
Scenario	Location	Stopped Vehicle
BW-CR	Mampang	-
NW-CR	Mampang	-
NW-WR	Lenteng Agung	v

No vertical lines in table. Statements that serve as captions for the entire table do not need footnote letters.

### 3. Graphics Content

Graphic contents are placed symmetrically on the page and there is one blank single space line between the graphic content and the paragraphs. A graphic content is placed immediately after it is referred to in the body of the text and is numbered in Arabic numerals. Caption for the graphic content is written below it and there is one blank single space line between it and the graphic content. The caption is written in font size 8, and placed as in the example. Between the graphic content with the body of the text there are one blank single space lines. If the graphic content will be referred in the paragraph in brackets, for example Figure 1.

All tables and figures will be processed as images. However, we cannot extract the tables and figures embedded in your document. (The figures and tables you insert in your document are only to help you gauge the size of your paper, for the convenience of the referees, and to make it easy for you to distribute preprints.) Therefore, submit, on separate sheets of paper, enlarged versions of the tables and figures that appear in your document. These are the images that we will scan and publish with your paper.



**Figure 1.** Magnetization as a function of applied field. Note that “Fig.” is abbreviated. There is a period after the figure number, followed by two spaces. It is good practice to explain the significance of the figure in the caption.

### 4. Mathematical Equation

The reaction or mathematical equation should be positioned symmetrically on the column, marked by sequential numbers written on the right corner within brackets. If the writing of the equation takes more than one line, numbers should be written on the last line. Letters used as mathematical symbols in the text should be written in italics such as *x*. Equations in the text should be referred to as abbreviations, for example equation (1). Make sure the equation is made with equation function (in Microsoft Word) or using LaTeX equation form (definitely we do not accept equation put as a picture).

$$J(A, B) = \frac{\sum_{i=1}^m (A_i = 1 \cap B_i = 1)}{\sum_{i=1}^m (A_i = 1 \cup B_i = 1)} \quad (1)$$

### 5. Programming Code

Programming code must be made in the text box and referenced as a figure. Programming code contents are placed symmetrically on the page and there is one blank single space line between the paragraphs. Code program in the text box written by using Consolas 10 pt in single space. A programming code content is placed immediately after it is referred to in the body of the text. Caption for the code program content is written below it and there is one blank single space line between it and the code program. The caption is written in font size 8, and placed as in the example. Between the code program with the body of the text there are one blank single space lines.<sup>1</sup>

```
Statement 1
Statement 2
...
for i = 1 to k:
    command 1
```

**Figure 2.** Dummy algorithm as an example for typesetting programming codes. You may add options to the listings package to provide styling to your code.

### 6. Citation

Citation in the text should be written using Arabic numbers and put in order in accordance to what they refer to in the text. Numbers should be written in square brackets such as “... Lafferty et al. [1] ...” Citation should be written one space away from the

<sup>1</sup><http://example.org>

words after commas or periods and before colons (:), semicolons (;), and question marks (?). If they are located at the end of a sentence, citations should be put before periods such as "... from the most recent work by Krähenbühl and Koltun [2]." If there are several citations, they should be written in a sorted and compressed form such as "... by several research works [1, 3–5]." All citations should then be written in the right order in the list of references at the end of the text, with the writing procedure as illustrated in the example.

## 7. Footnotes

Footnotes can be used to provide additional comments or information. Each footnote should appear as a superscripted number in the text right after the word to which the footnote is relevant, without any separating whitespace, for example, "... this software library<sup>2</sup> is developed by ..." If the location of the footnote is after a word followed by a punctuation (a period, a comma, etc.), then put the footnote **after** the punctuation, for example, "... visit the website of this service.<sup>3</sup> You can find ...". This rule is applicable to all punctuations except the dash, i.e., — character.

## 8. Submission

Please submit the manuscript to the Open Journal System at <http://jiki.cs.ui.ac.id>. The communication between the authors and the editors will be done through Open Journal System and email. Should you experience problems in the submission, please contact us at [jiki@cs.ui.ac.id](mailto:jiki@cs.ui.ac.id).

## 9. References

References should be written following the order they appear in the text, using Arabic numbers in square brackets, as seen in the examples. References should consist of initial and writers' names, names of journals or title of books, volumes, editors (if any), publishers and their cities, years of publication, and pages. All writer's names have to be mentioned. Use the abbreviation "Anon" if writers are anonymous. Names of journals should be written using the commonly-used abbreviations.

<sup>2</sup>Created in 1990, see <http://example.com>, this website provides various services to the scientific community.

<sup>3</sup><http://example.org>

## Acknowledgement

Put your acknowledgement to people, funding, etc. just before the list of references, **but** only for the camera ready version.

## References

- [1] J. D. Lafferty, A. McCallum, and F. C. N. Pereira, "Conditional random fields: Probabilistic models for segmenting and labeling sequence data," in *Proceedings of the Eighteenth International Conference on Machine Learning*, ser. ICML '01. San Francisco, CA, USA: Morgan Kaufmann Publishers Inc., 2001, pp. 282–289, <http://dl.acm.org/citation.cfm?id=645530.655813>.
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