*Article type*

# Title of the paper

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**Abstract:**  There is a large variety of ant species, and most species are diverse in terms of size, shape, behaviors, and especially skin (cuticle) textures. However, the significance of ant cuticle texture is not widely researched. This research employs modern machine learning methods such as texture analysis and classification with CNN and clustering to automatically group similar ant species to allow for the study of influences cuticle texture on ant ecology.

**Keywords:** Texture Analysis, Image Processing, Clustering, Machine Learning, Myrmecology, Ecology

## 1. Introduction

Submission of a manuscript implies that the work described has not been published before, and not been under consideration for publishing anywhere else. Your submission also means that the manuscript has been approved by all co-authors with appropriate permission if required. The publisher will not be held legally responsible should any dispute be raised for any reason. AIMS-ACI is an OA publication published quarterly by AIMS Press in February, May, August, and November. Publishing is currently free of charge. Readers can access all published articles free of charge through the journal website https://aimspress.com/journal/aci

## 2. Layout and fonts

The page size is A4 ($8.5 \times 11.0$ in or $21.59 \times 27.94$ cm). The margin is set to moderate. Font for all text, except symbols and formulae, should use Times New Roman. Article title is bold with a font size 16 and aligned to the left. Authors are bold with a font size 12. Using Times New Roman size 12 for the main text, including figure captions and table titles. However, text size for contents in a table can

be chosen from 8 to 12 to fit the table within the width of the page.

## 3. Headline and sub-headline

The first-level headline is numbered and bold with a font size 12, and has a space of 12 *pt* before and after the headline. Each paragraph begins with an indentation of 0.63 *cm* (the same by using the Tab key once) in the first line. A paragraph does not have a space before and after that paragraph.

### 3.1. *The second-level headline*

The second-level headline is numbered with a font size 12. The second-level headline has a default space of 6 *pt* before and after it.

#### 3.1.1. The third-level headline (if necessary)

If really necessary, the third-level headline should be numbered and italicized with a font size 12, indented by 0.63 *cm* (the same by using the Tab key once). The third-level headline has a default space of 6 *pt* before and after it. Any lower headline should be avoided.

### 3.2. *Footnotes*

Although not encouraged, footnotes can be used to provide additional information for an informal reference that cannot be included in the reference list. A footnote should be numbered and cannot contain any figure or table. Use font size 8 for footnotes.

## 4. Figures or images, captions, tables, table titles, and formulae

### 4.1. *Figure/image and caption*

Leave a space of one line before and after a figure or an image, i.e., one line between the main text and the top of the figure or image, and one line between the bottom of the figure or image and the caption. The caption has a default space of 12 *pt* after it so the main text can continue below the caption. If no text follows the figure caption, do not leave any space between the caption and the next headline (the headline has a default space).

**Figure 1.** Insert the figure/image here

Figures should be numbered consecutively in the text. A figure can be referred explicitly in the text as Figure 1, or implicitly at the end of a sentence in parentheses (Fig. 1).

Use black and white graphic for line drawings. All lines should be at least 0.1 mm (0.3 *pt*) wide. Line drawings or scanned line drawings should have a resolution at least 600 dpi. Images with a large volume should be properly compressed within 1 MB each. Scanned images should be properly edited to balance the volume size and clarity of the image.

Figure captions begin with **Figure x.** in bold, followed by the text. Do not add a full stop at the end of the caption.

## 4.2. Tables and table titles

**Table 1.** Publication schedule for AIMS-ACI in 2022

| Issue | Publishing date | Submission deadline |
| --- | --- | --- |
| First issue | February 25, 2022 | January 15, 2022 |
| Second issue | May 25, 2022 | April 15, 2022 |
| Third issue | August 25, 2022 | July 15, 2022 |
| Fourth issue | November 25, 2022 | October 15, 2022 |

Table title should be placed above the table, numbered consecutively, and referred in the text like Table 1 or (Table 1). There is no space between the table and table title. Leave a space of one line above the table title and one line below the bottom of the table. If a new first-level headline follows the table immediately, do not leave the space below the table.

The font of the table title is size 12 but the font of the table contents can be sizes 8 to 12 depending on the best fit for the table. Table title begins with **Table x**. in bold, followed by the text. Do not add a full stop at the end of the table title.

## 4.3. Mathematical formulae

Mathematical formulae should be numbered consecutively by placing the number in parentheses like (1), one TAB space away from the right line. Mathematical formulae should be typed using MS Word Equation or better using *MathType*. Use size 10–12 for the main characters and size 6–8 for subscripts or superscripts. Leave a space of 6 *pt* between two formula in separate lines. Some examples are shown below.

$$\lim_{x \mapsto a^+} f(x) = \pm\infty \qquad \text{or} \qquad \lim_{x \mapsto a^-} f(x) = \pm\infty \tag{1}$$

$$\lim_{x \mapsto \infty} f(x) = a \qquad \text{or} \qquad \lim_{x \mapsto -\infty} f(x) = b \tag{2}$$

To cite a formula in the text, use the number like Equation (1), or Eq. (2), or alike.

## 5. Submission, review, and decision

In the first year, submission, review and decisions of manuscripts is conducted through email communications. Please send your manuscript to one of the relevant Editors-in-Chief by their email available on the journal Website. With the increase in submissions from 2022, we would use the AIMS Editorial System to handle the process of submission, review, and decisions.

Once a submission is received, the receiving Editor will pre-screen the article for its suitability and quality for the journal. After passing this pre-screening, the Editor may act as the "Academic Editor" or assign this manuscript to another Editor from the Editorial Board as the "Academic Editor"to handle the review of this paper, communicate with the authors on revisions, and inform the final decision after consultation with the relevant Editor-in-Chief.

AIMS-ACI holds a high standard in peer review. A submitted manuscript should be reviewed by at least three independent reviewers who are scholars and knowledgeable of the area of research. Standard review forms are available for reviewers but they could choose own appropriate way of reporting to the Academic Editor.

## 6. Reference style, citation, and cross-reference

Test citation [1].

## Acknowledgments

We would like to thank the constructive feedback provided by the reviewers.

## References

1. Philip S. Ward. The Phylogeny and Evolution of Ants. *Annual Review of Ecology, Evolution, and Systematics*, 45(1):23–43, November 2014.