

## DEPARTMENT: AFFECTIVE COMPUTING AND SENTIMENT ANALYSIS

# ACSA Column Title

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*Abstract—Abstract text goes here. This single paragraph ( $\leq 200$  words) summarizes the significant aspects of the manuscript. Often it indicates whether the manuscript is a report of new work, a review or overview, or a combination of thereof. Do not cite references in the abstract. Papers must not have been published previously, must fit into the theme of ACSA, and should not exceed 8 pages in total.*

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The introduction should provide background information and should indicate the purpose of the manuscript. Cite relevant work by others, including research outside your company/institution. Place your work in perspective by referring to other research papers. Try your best to link to ACSA literature<sup>1</sup> by citing a couple of previous columns (listed in the attached file 'acsa.bib'). Some of these discuss foundations of AI [1] and sentiment analysis [2], while the rest cover related topics such as multimodality [3], multitask learning [4], knowledge representation [5], emotion categorization models [6], conversational agents [7], and natural language processing (NLP) [8]. Inclusion of statements at the end of the introduction regarding the organization of the manuscript can be helpful to the reader.

### SECTIONS

Sections following the introduction should present your results and findings. Always use CAPS for section titles. The paper should contain 10 references tops, and be maximum 8-pages-long including all figures,

tables, references, and bios (no appendices allowed). The manuscript should evolve so that each sentence, equation, figure, and table flow smoothly and logically from whatever precedes it. Relevant work by others, as well as relevant products from other companies, should be adequately and accurately cited. Sufficient support should be provided (or cited) for the assertions made and conclusions drawn. Headings should be unnumbered, with no ending punctuation. As demonstrated in this document, initial paragraphs after headings should not be indented.

### Subsections

Subsections are allowed but should be avoided considering the relatively short length of ACSA columns.

*Subsubsections* Subsections are allowed too but should also be avoided for compactness.

### JOURNAL STYLE

Use American English when writing your paper. The serial comma should be used ("a, b, and c" not "a, b and c"). Periods, commas, and other punctuation should go outside of quotation marks. The use of technical jargon, slang, and vague or informal English should be avoided.

### ACRONYMS AND ABBREVIATIONS

Every acronym, e.g., NLP, should be defined only once (at the first occurrence) and always used afterwards (except for abstract and section titles). Also, it is not recommendable to generate acronyms for multiword expressions that are shorter than 3 words, unless they are universally recognized, e.g., AI.

### NUMBERS

Spell out numerals that have no unit of measure or time (one, two, ... ten), but always use numerals with units of time and measure. Some examples are as follows: 11 through 999; 1,000; 10,000; twentieth century; twofold, tenfold, 20-fold; 2 times; 0.2 cm;  $p = .001$ ; 10% to 25%.

### MATH AND EQUATIONS

Scalar *variables* and *physical constants* should be italicized, and a bold (non-italics) font should be used for **vectors** and **matrices**. Do not italicize subscripts unless they are variables. Equations should be either display (with a number in parentheses) or inline. Display equations should be flush left and numbered consecutively, with equation numbers in parentheses and flush right. Make sure the symbols in your equation have been defined before the equation appears or immediately following. Please refer to "Equation (1)," not "Eq. (1)" or "equation (1)." Punctuate display equations when they are part of the sentence preceding it, as in

$$A = \pi r^2. \tag{1}$$

In addition, if the text following the equation flows logically as a part of the display equation,

$$A = \pi r^2, \tag{2}$$

use ending punctuation (comma) after the display equation.

### LISTS

Avoid using lists. Instead, use full sentences and flowing paragraphs. If you absolutely must use a list, use them rarely and keep them short:

- *Style for bulleted lists*—This is the style that should be used for bulleted lists.
- *Punctuation in lists*—Each item in the list should end with a period, regardless of whether full sentences are used.

TABLE 1. Units for magnetic properties.

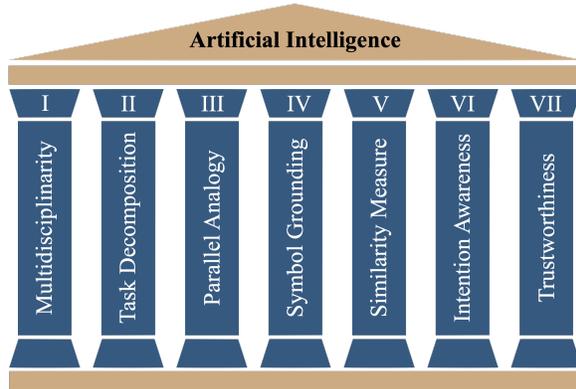
Symbol	Quantity	Conversion from Gaussian and CGS EMU to SI <sup>a</sup>
$\Phi$	Magnetic flux	1 Mx $\rightarrow$ $10^{-8}$ Wb $= 10^{-8}$ V · s
$B$	Magnetic flux density, magnetic induction	1 G $\rightarrow$ $10^{-4}$ T $= 10^{-4}$ Wb/m <sup>2</sup>
$H$	Magnetic field strength	1 Oe $\rightarrow$ $10^{-3}/(4\pi)$ A/m
$m$	Magnetic moment	1 erg/G = 1 emu $\rightarrow$ $10^{-3}$ A · m <sup>2</sup> $m^2 = 10^{-3}$ J/T
$M$	Magnetization	1 erg/(G · cm <sup>3</sup> ) = 1 emu/cm <sup>3</sup> $\rightarrow$ $10^{-3}$ A/m
$4\pi M$	Magnetization	1 G $\rightarrow$ $10^{-3}/(4\pi)$ A/m
$\sigma$	Specific magnetization	1 erg/(G · g) = 1 emu/g $\rightarrow$ 1 A · m <sup>2</sup> /kg
$j$	Magnetic dipole moment	1 erg/G = 1 emu $\rightarrow$ $4\pi \times 10^{-10}$ Wb · m
$J$	Magnetic polarization	1 erg/(G · cm <sup>3</sup> ) = 1 emu/cm <sup>3</sup> $\rightarrow$ $4\pi \times 10^{-4}$ T
$\chi, \kappa$	Susceptibility	1 $\rightarrow$ $4\pi$
$\chi_\rho$	Mass susceptibility	1 cm <sup>3</sup> /g $\rightarrow$ $4\pi \times 10^{-3}$ m <sup>3</sup> /kg
$\mu$	Permeability	1 $\rightarrow$ $4\pi \times 10^{-7}$ H/m $= 4\pi \times 10^{-7}$ Wb/(A · m)
$\mu_r$	Relative permeability	$\mu \rightarrow \mu_r$
$w, W$	Energy density	1 erg/cm <sup>3</sup> $\rightarrow$ $10^{-1}$ J/m <sup>3</sup>

Vertical lines are optional in tables. Statements that serve as captions for the entire table do not need footnote letters.

<sup>a</sup>Gaussian units are the same as cg emu for magneto-statics; Mx = maxwell, G = gauss, Oe = oersted; Wb = weber, V = volt, s = second, T = tesla, m = meter, A = ampere, J = joule, kg = kilogram, H = henry.

### FIGURES AND TABLE

Figures and tables must be cited in the running text in consecutive order. Previously published figures or tables require permission to reprint. Please obtain permission. Then, add the following text to the figure/table caption: "From [reference no.], with permission," or "Adapted from [reference no.], with permission." *Carefully* explain each figure in the text. Each manuscript should be limited to four figures.



**FIGURE 1.** Note that “Figure” is spelled out. There is a period after the figure number, followed by one space. It is good practice to briefly explain the significance of the figure in the caption.

## CONCLUSION

The manuscript should include a conclusion. In this section, summarize what was described in your paper. Future directions may also be included in this section. Authors are strongly encouraged not to reference multiple figures or tables in the conclusion; these should be referenced in the body of the paper.

## REFERENCES

1. E. Cambria et al., “Seven Pillars for the Future of Artificial Intelligence,” *IEEE Intelligent Systems*, vol. 38, no. 6, 2023, pp. 62–69.
2. E. Cambria, “Affective Computing and Sentiment Analysis,” *IEEE Intelligent Systems*, vol. 31, no. 2, 2016, pp. 102–107.
3. L. Stappen et al., “Sentiment Analysis and Topic Recognition in Video Transcriptions,” *IEEE Intelligent Systems*, vol. 36, no. 2, 2021, pp. 88–95.
4. E. Cambria et al., “Sentiment Analysis is a Big Suitcase,” *IEEE Intelligent Systems*, vol. 32, no. 6, 2017, pp. 74–80.
5. I. Donadello, “OntoSenticNet 2: Enhancing Reasoning within Sentiment Analysis,” *IEEE Intelligent Systems*, vol. 37, no. 2, 2022, pp. 103–110.
6. Y. Susanto et al., “The Hourglass Model Revisited,” *IEEE Intelligent Systems*, vol. 35, no. 5, 2020, pp. 96–102.
7. M. Amin, E. Cambria, and B. Schuller, “Will Affective Computing Emerge from Foundation Models and General AI? A first evaluation on ChatGPT,” *IEEE Intelligent Systems*, vol. 38, no. 2, 2023, pp. 15–23.
8. M. Amin, E. Cambria, and B. Schuller, “Can ChatGPT’s Responses Boost Traditional Natural Language Processing?” *IEEE Intelligent Systems*, vol. 38, no. 5, 2023, pp. 5–11.

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