

COMPUTATIONAL INTELLIGENCE

Writing Journal Papers



Adrian Horzyk

WRITING A QUALITY MANUSCRIPT



Originality – each scientific paper should contain some innovations and contributions.

Relevance and Motivation

CHECKING CRITERIA

Presentation and Exposure

Possible submission vis-à-vis
scope of the journal or conference and
potential impact of the work

STRUCTURE OF THE ARTICLE



1. Title
2. Authors
3. Abstract
4. Keywords
5. Main text
 1. Introduction
 2. Method description
 3. Results and Comparisons
 4. Discussion and Conclusion
6. Acknowledgements
7. References
8. Supplementary materials (optional)

TITLE



Can Neurons Efficiently Arrange and Sort Data?

- ✓ A good title should contain the fewest possible words that adequately describe the contents of a paper
- ✓ Attract attention of potential readers.
- ✓ Convey main research findings.
- ✓ Be interesting, specific, concise and complete.
- ✓ Focus on a part of the content only.

Do not use:

- × Unnecessary jargon
- × Uncommon abbreviations
- × Ambiguous terms
- × Unnecessary details

AUTHORS



Names of all authors are usually supplemented by:

- ✓ Their affiliations
- ✓ Correspondence addresses
- ✓ E-mails

Sometimes by:

- ✓ Membership information
- ✓ Web pages

J. A. Starzyk and J. Graham
School of EECS
Ohio University,
Athens, OH, USA
{jg193404, starzykj}@ohio.edu

A. Horzyk
Dept. Automatics and Biomedical Engineering
AGH University of Science and Technology
Krakow, Poland
horzyk@agh.edu.pl

Adrian Horzyk, Janusz A. Starzyk, *Senior Life Member IEEE*, and James Graham, *Student Member, IEEE*

Adrian Horzyk

AGH University of Science and Technology, Department of Automatics and
Biomedical Engineering, 30-059 Cracow, Mickiewicza Av. 30, Poland,
horzyk@agh.edu.pl

ABSTRACT



The quality of an abstract usually strongly impacts the reviewers' and editor's final decisions!

Consult the Guide for Authors for word limit!

A good abstract:

- ✓ Specifies the most important outcomes, results, and contributions
- ✓ Is brief, specific, precise, and honest
- ✓ Stands alone entity
- ✓ should be like a good *elevator pitch* in business

Do not use:

- × technical jargon
- × citations
- × References
- × formulas

Abstract— **This paper describes** the integration of semantic and episodic memory models and the benefits of such integration. Semantic memory is used as a foundation of knowledge and concept learning, and is needed for the operation of any cognitive system. Episodic memory retains personal experiences stored based on their significance – it is supported by the semantic memory, and in return it supports semantic memory operation. Integrated declarative memories are critical for cognitive system development, yet very little research has been done to develop their computational models. **We considered** structural self-organization of both semantic and episodic memories with symbolic representation of input events. Sequences of events are stored in episodic memory and are used to build associations in semantic memory. **We demonstrated** that integration of semantic and episodic memories improves the native operation of both types of memories. **Experimental results are presented to** illustrate how the two memories complement each other by **improving** recognition, prediction and context based generalization of individual memories.

KEYWORDS



- Keywords are important for indexing, referencing and search engines.
- They enable your manuscript to be more easily identified, found and cited!
- Always check the journal requirements, especially: Guide for Authors.
- ✓ Keywords should be specific in a scope of a paper.
- × Avoid uncommon abbreviations
- × Do not use too general terms

Keywords: brain inspired computations; neuron models; sorting algorithms; ASSORT; associative representation; computational complexity.

Index Terms—Semantic memory, episodic memory, cognitive system, motivated and reinforcement learning, event significance.

INTRODUCTION



Introduction should provide the necessary background information to put your work and contribution into a context.

An introduction should make clear:

- Why the current work was performed:
 - Aims
 - Significance
- What has been done before:
 - In your research (place here the adequate references to your papers)
 - In the other studies (place here the adequate references to the papers)
- What was done (describe your contribution in brief terms and stress the novelty of your solution)
- What has achieved (in brief terms)

INTRODUCTION



- ✓ Consult the Guide for Authors for word limit.
- ✓ Set the scene
- ✓ Outline the scientific task and your hypotheses
- ✓ Ensure that the literature cited is balanced, relevant and up to date (possibly from last few years)
- ✓ Define any non-standard abbreviations and necessary jargon.
- ✓ Be simple, clear and decent.

Do not:

- × Use too many abbreviations or colliding with other commonly used.
- × Write an extensive review of the field
- × Cite disproportionately your own work, work of colleagues or work that supports your findings while ignoring contradictory studies or work by competitors.
- × Describe methods, results or conclusions other than to outline what was done and achieved in the final paragraph
- × Overuse terms like „novel“, „highly original“, „for the first time“, „breakthrough“, „innovative“, „revolutionary“ etc.

MATHEMATICS



- ✓ Explain all symbols before using them
- ✓ Use standard notation
- ✓ Check equations carefully
- ✓ Number equations for further references
- × Avoid „dry” formulas without explanation
- × Avoid misuse of symbols

$$X_{R_{v_i}^a} = t_{v_i^a} \cdot x_{v_i^a} + \sum_j^{R_{v_j}^a \rightsquigarrow R_{v_i}^a} y_{R_{v_j}^a} \cdot w_{R_{v_j}^a, R_{v_i}^a} + \sum_k^{O_k \rightsquigarrow R_{v_i}^a} y_{O_k} \cdot w_{O_k, R_{v_i}^a} \quad (8)$$

PRESENTATION FLOW



Use the top-down approach:

1. Main idea and planned goals
 2. Fundamentals and backgrounds
 3. Algorithms and Methods
 4. Experiments and illustrative example(s)
to make presentation more clear, attractive and
motivate to use
 5. Comparisons and Benchmarks
 6. Discussion
 7. Conclusions, Remarks and Summaries
- × Avoid mixing levels of abstraction, e.g. concept with
numerical values used in experiments

PRESENTATION OF RESULTS



Describe clearly the main finding of your research, illustrate them and compare with the results of other researches referencing to their publications:

- ✓ Use figures and tables to summarize data
- ✓ Use benchmark examples and comparisons
- ✓ Show the results of statistical analysis
- ✓ Compare „like with like”

Do not:

- × Duplicate data among tables, figures and text
- × Use graphics to illustrate data that can easily be summarized with text

GRAPHICS



- Illustrations should only be used to present essential data!
- The information in the table can be presented in one sentence above the table.
- The information in the figure can be presented in one sentence under the figure.
- Legend should be clear and of adequate size – usually a single line, avoid poor descriptions.
- Do not place too many data in one table or figure.
- Data should be somehow organized, trend lines visible.
- Font size in figures and tables should not be less than 8 pt.
- Summarize results in the text where possible.

EXAMPLE OF A FIGURE WITH CHARTS

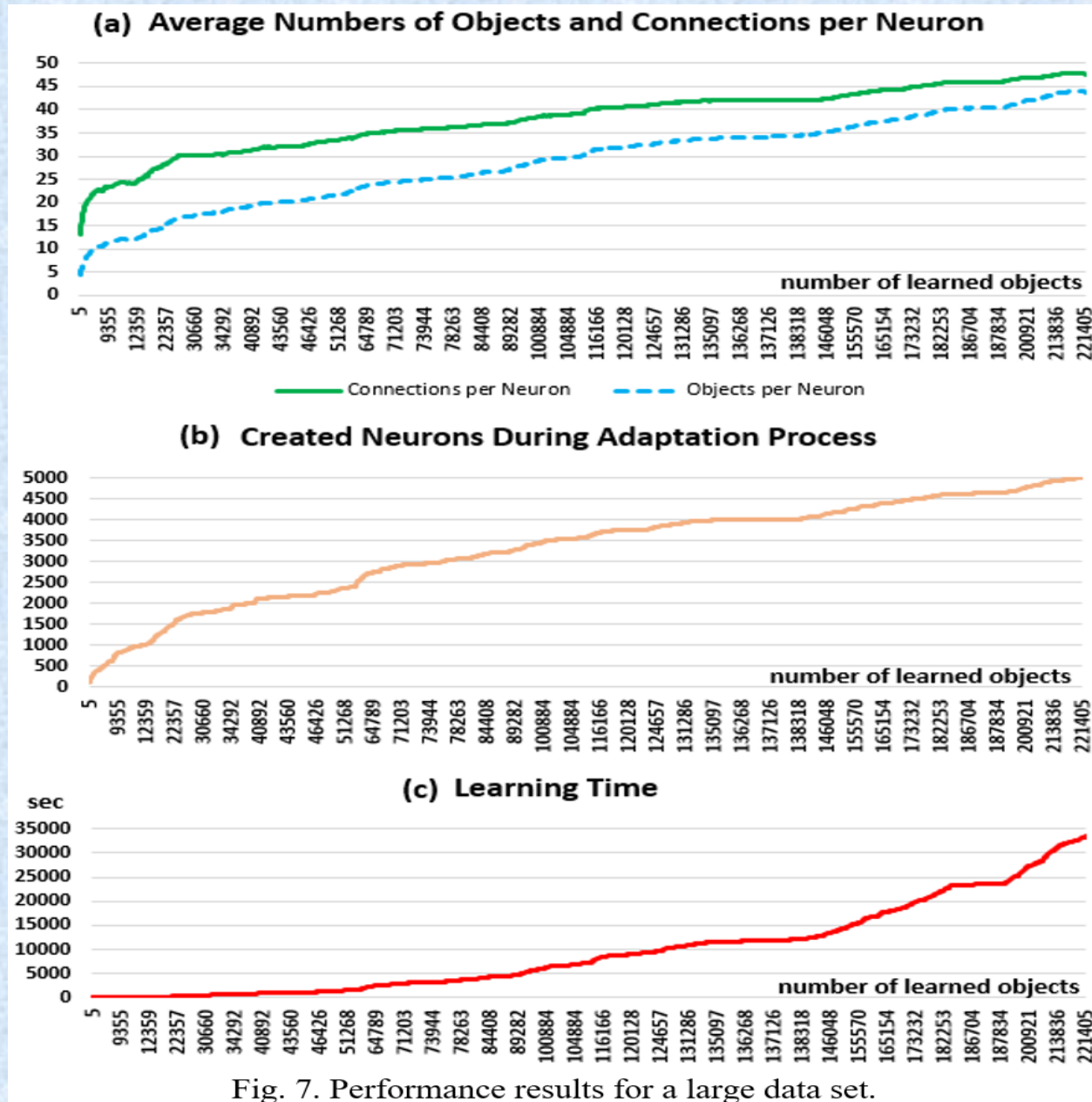


Fig. 7. Performance results for a large data set.

EXAMPLE OF A FIGURE

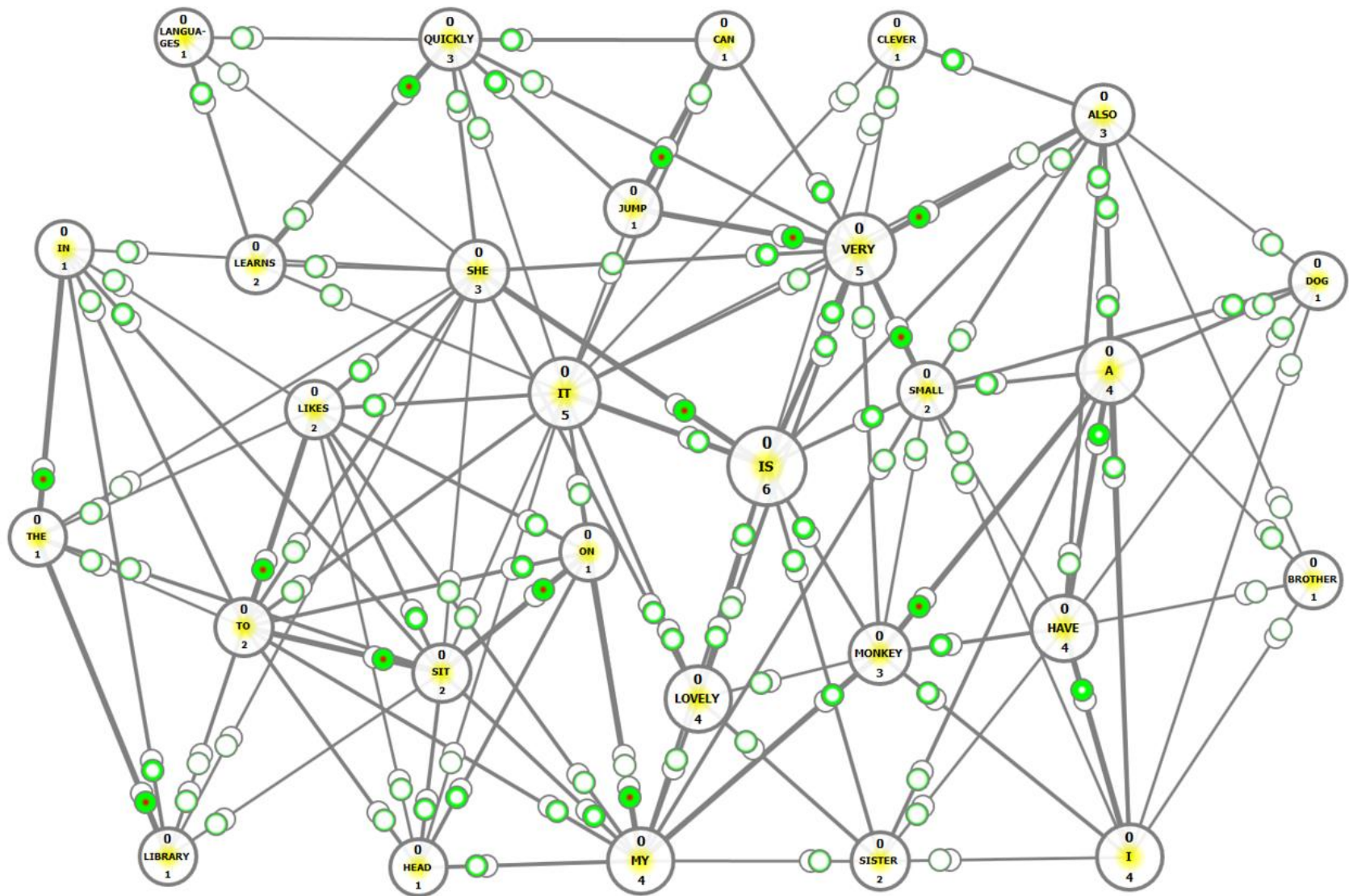


Fig. 8. View of the training sample sequences described in Example 1.

EXAMPLE OF A TABLE



TABLE IV. SEMANTIC MEMORY RESPONSE IN REAL TIME INTERACTION

Question	ANAKG only	ANAKG with LTM feedback
What is this monkey like?	Is monkey	Is monkey
Monkey is what?	Monkey is	Monkey is very lovely small
Sister is what?	Sister is	Sister is lovely
Who is very clever?	Is very lovely clever	Is very lovely clever small
Who is very clever?	Is very clever	It is also very clever
What my brother like?	My brother	My brother
What she likes to do in the reading room?	She likes to in the reading library room in the	She likes to sit in the library reading room the in library

DISCUSSION



Describe:

- ✓ How the results relate to the study's aims and hypotheses
- ✓ How the findings relate to those of other studies
- ✓ Comparisons of your findings to other results
- ✓ All possible interpretations of your findings
- ✓ Limitations of your current study
- ✓ Further directions of your planned studies

Avoid:

- × Making „grand statements“ that are not supported by the data and presented results, e.g. „*This novel learning method will enormously reduce the learning time.*“
- × Introducing new results or terms
- × Announcing any future results

CONCLUSION



- ✓ Put your study into a context.
- ✓ Describe how it represents an advance in the field.
- ✓ Stress the impact of your study and the achieved results.
- ✓ Suggest future experiments and studies.
- × Avoid repetition with other sections.
- × Avoid being overly speculative.
- × Do not over-emphasize the impact of your study.

VII. CONCLUSION

This paper **proposed** an integrated semantic and episodic memory model. Integration **improves** recognition in episodic memory by providing associated context that helps to trigger episodic memory traces. Episodic memory **influences** activation of the semantic memory neurons, removing ambiguities of sequential recall within a specific context. This **is important in situations** where exact recall of events is needed, rather than indiscriminate recall of all associated events.

REFERENCES



Check:

- the Guide for Authors for the correct format (each Journal has its own preferences and used standard)
- Spelling of author names
- Punctuation (full-stop, comas and colon marks)
- Number of authors to include before using „et. al.”
- Reference style

Avoid:

- Outdated papers
- Excessive self-citation
- Personal communication
- Unpublished observations
- Citing articles published only in the local language (e.g. Polish)
- Submitted manuscripts not yet accepted

[40] V. A. Nguyen, J. A. Starzyk, W-B. Goh, D. Jachyra, “Neural Network Structure for Spatio-Temporal Long-Term Memory,” *IEEE Trans on Neural Networks and Learning Systems*, vol. 23, no. 6, June, 2012, pp. 971-983.

[41] M. W. Kadous, “Temporal classification: Extending the classification paradigm to multivariate analysis,” Ph.D. thesis, School Comput. Sci. Eng., Univ. New South Wales, Kensington, Australia, 2002. |

LANGUAGE



Poorly written papers are often rejected!

The key is to be as brief and specific as possible without omitting essential details.

Good paper is:

- ✓ Clear
- ✓ Concise
- ✓ Correct
- ✓ Accurate

Submit your manuscripts to: cityhillsproofreading@gmail.com,
manuscripts@cityhillsproofreading.com, articles@cityhillsproofreading.com,
papers@cityhillsproofreading.com

The manuscripts must be submitted in MS-Word format. Authors should use a standard typeface such as Times New Roman in 12 points and 1.5 line spacing. Upon receipt of Manuscript, an acknowledgment letter, manuscript number and the service charge will be sent to the author(s).

Our charges are categorized below:

\$80 (USD) for manuscripts in the range of 1-9 pages
\$100 (USD) for manuscripts in the range of 11-14 pages
\$120 (USD) for manuscripts in the range of 15-19 pages
\$140 (USD) for manuscripts in the range of 20-24 pages
\$160(USD) for manuscripts in the range of 25-29 pages
\$180 (USD) for manuscripts in the range of 30-34 pages
\$200 (USD) for manuscripts in the range of 35-40 pages
\$250 (USD) for manuscripts in the range of 41-50 pages
\$300 (USD) for manuscripts in the range of 51-60 pages
\$350 (USD) for manuscripts in the range of 61-70 pages
\$400(USD) for manuscripts in the range of 71-80 pages
\$450 (USD) for manuscripts in the range of 81-90 pages
\$500 (USD) for manuscripts in the range of 91-100 pages

Also, we allow discount for multiple manuscripts and organizations/institutes that requires our services on a regular basis.

COMMON TRAPS



Good writing avoids the following traps:

- × Repetition
- × Redundancy
- × Ambiguity
- × Exaggeration
- × Incorrect use of „etc.” or „and so on”

Vary the sentences used when writing the abstract or describing findings at the end of the introduction.

Do not copy text from other sections verbatim!

Avoid words with the same meaning in the same sentence, e.g. „In addition, there where also described some ...”

USE LANGUAGE EDITING SERVICES



If you have doubts:

- Use language editing services that are commercially available to polish the language in your manuscript prior to journal submission!
- Do not waste your, reviewers' and editor's time!
- Your manuscript is precious – invest in it!
- Do not expose to reject the article and prolonging the publication of your research due to the poor language!
- Ask any expert in your field (e.g. your tutor) to read your manuscript prior to submission!

Thus, we urge Authors and PhD students to send their articles to the email below.

editor@salientpapersproofreading.com

Please check our rates below

Pages	Cost (\$)
1-10	90
11-20	120
21-30	140
31-45	170
46-50	200
51-55	250

USE LANGUAGE EDITING SERVICES



submitpapers@felivicproofreading.com

The manuscripts should be in the format Times New Roman font, size 12 and 1.5 line spacing. Our rates are tabulated below.

Pages	Cost (\$)
1-10	80
11-20	110
21-30	140
31-45	170
46-50	200
51-55	250

Our professional editorial team makes sure that each paper sent to us passes through these services.

- a. Copy-editing for grammar and style
- b. Proofreading for typos and other errors
- c. Editing for clarity
- d. Paraphrasing, editing of sentences and aligning

Two copies of your work will be sent back to you after proofreading.

- (1) Edited copy of article with track changes
- (2) Edited copy of article without track changes

For a quick response, email felivicproofreading@gmail.com

USE GRAMMAR PROOF-READERS

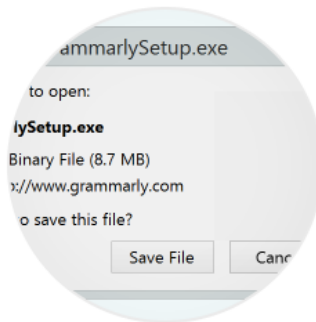


Hello, Adrian Horzyk

Downloading Grammarly for MS Office® ...

Thanks! Now follow these simple steps to start using the add-in.
If the file did not download, click [here](#).

Run the Grammarly Installer



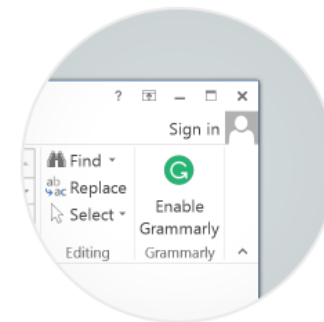
Get things going by clicking **Save** on the installer wizard.

Follow the Setup Instructions



Click **Run** in the 'System Alert' window and then follow the setup instructions.

Click "Enable Grammarly"



In MS Word, the **Enable Grammarly** button will appear. Select it to finalize your setup and activate Grammarly. Congratulations, you're ready to write with more confidence!

<https://www.grammarly.com/office-addin/downloading>

USE GRAMMAR PROOF-READERS



The grammar proof-readers find out lot's of common mistakes and propose corrections, e.g.:

The screenshot shows the Microsoft Word ribbon with the Grammarly tab selected. The ribbon includes sections for 'PLIK', 'NARZĘDZIA GŁÓWNE', 'WSTAWIANIE', 'PROJEKTOWANIE', 'UKŁAD STRONY', 'ODWOŁANIA', 'KORRESPONDENCJA', 'RECENZJA', 'WIDOK', 'DODATKI', and 'GRAMMARLY'. The Grammarly section contains icons for 'Disable Grammarly', 'Contextual Spelling', 'Grammar', 'Punctuation', 'Sentence structure', 'Style', 'Advanced Issues', 'Genre', 'Vocabulary enhancement', 'Plagiarism', 'Log out', 'Settings', 'About', 'Open FAQ', and 'View Tour'. Below the ribbon, a text document is open with the following text: 'there are used sensors, sensory neurons, and object neurons with a few such rules. The sensory neurons are preprogrammed to create exactly two connections to other sensory neurons, which is necessary to sort data sequentially. Each sensory neuron is also preprogrammed to connect to a single sensor which is the mostly sensitive to a unique attribute value. All sensors are the most sensitive to their represented values and appropriately less sensitive to all other values. Each sensor measures the similarity of the represented value to an input value presented on the input sensory field in which this sensor is placed. The plastic input sensory fields can represent biological senses and other attributes we cannot meet in biological creatures but they are useful from the practical point of view in order to optimize neural structures for various data and attributes.' The word 'mostly' is highlighted in red. A Grammarly sidebar is open on the right, showing a notification: 'Possibly confused word: mostly'. It suggests 'Did you mean: most?' and states 'The word mostly doesn't seem to fit this context. Consider replacing it with a different one.' There is an 'IGNORE' button at the bottom right of the sidebar.

there are used sensors, sensory neurons, and object neurons with a few such rules. The sensory neurons are preprogrammed to create exactly two connections to other sensory neurons, which is necessary to sort data sequentially. Each sensory neuron is also preprogrammed to connect to a single sensor which is the **mostly** sensitive to a unique attribute value. All sensors are the most sensitive to their represented values and appropriately less sensitive to all other values. Each sensor measures the similarity of the represented value to an input value presented on the input sensory field in which this sensor is placed. The plastic input sensory fields can represent biological senses and other attributes we cannot meet in biological creatures but they are useful from the practical point of view in order to optimize neural structures for various data and attributes.

Grammarly

Possibly confused word: **mostly**

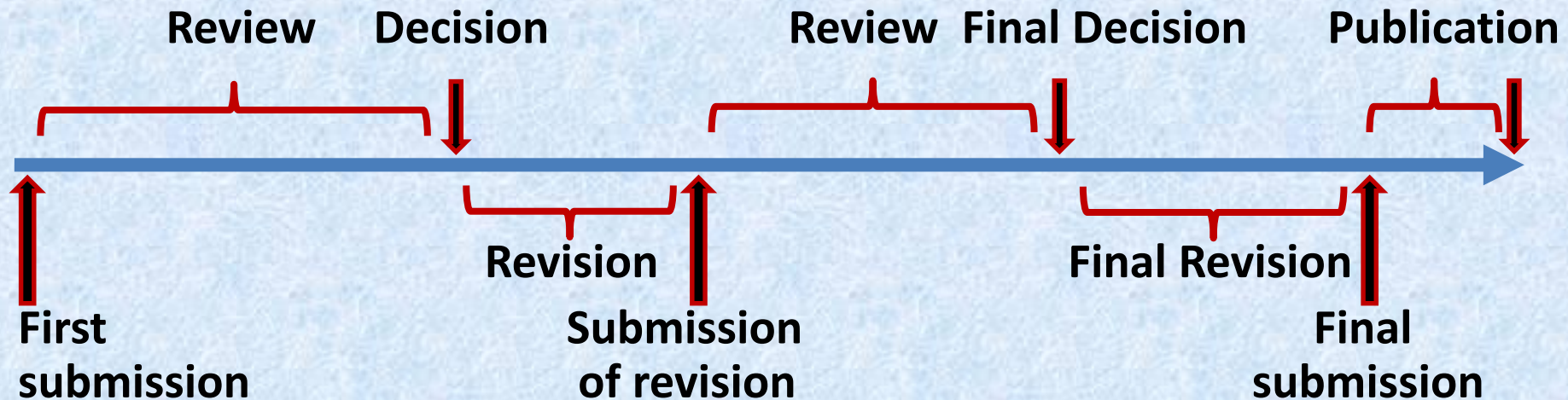
Did you mean: **most**?

The word **mostly** doesn't seem to fit this context. Consider replacing it with a different one.

✗ IGNORE

<https://www.grammarly.com/office-addin/downloading>

MANUSCRIPT SUBMISSION MILESTONES



Always carefully study the reviewers' comments and prepare a detailed and polite letter of your response:

- Respond to all points (cite them in your letter), even if you disagree with a reviewer, provide a polite, scientifically solid rebuttal rather than ignore their comments.
- Provide page and line numbers when referring to revisions made in the manuscript.
- Perform additional calculations, computations, examples, experiments, figures, tables or other changes if required – these usually serve to make the final paper stronger.
- State specifically what changes you have made to address the reviewers' comments, mentioning the page and line number where changes have been made.
- Avoid repeating the same response over and over, if a similar comment is made by multiple people explain your position once and refer back to your earlier response in responses to other reviewers or the editor.

ACCEPTING REJECTION



- Do not take it personally!
- Try to understand why the paper has been rejected?
- Evaluate honestly – will your paper meet the journal or conference requirements with the addition of more data or is another journal more appropriate?
- Do not resubmit your manuscript elsewhere without significant revisions addressing the reasons for rejection and checking the new Guide for Authors!
- In your cover letter, declare that the paper was rejected and name the journal.
- Include the referees' reports and show how each comment has been addressed.
- Explain why you are submitting the paper to this journal and why you think that it is a more appropriate journal?

MULTIPLE SUBMISSIONS



- Multiple submissions save your time but waste editors'!
- The editorial process of your manuscript will be completely stopped if the duplicated submissions are discovered!!!
- Competing journals constantly exchange information on suspicious papers.
- You should not send your manuscripts to a second journal until you receive the final decision form the first one!
- Previously published papers should not be submitted to another journal!
- Short conference papers can be significantly expanded to consider subsequent submission for journal publication.

PLAGIARISM



Federal Office of Science and Technology Policy (1999):

„Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit, including those obtained through confidential review of others' research proposals and manuscripts.”

If plagiarism or self-plagiarism is discovered journals publish the retraction notices and all authors lose their rights to further publication in these journals!!!

FABRICATION AND FALSIFICATION



Fabrication is making up data or results, and recording or reporting them.

Falsification is manipulating research materials, equipment, processes, or changing / omitting data or results such that the research is not accurately represented in the research record.

MISTAKES YOU CANNOT FOLLOW!



- ❖ Refuse to read the previous literature published in your field
- ❖ Take the lazy route and plagiarize
- ❖ Omit key article components
- ❖ Disrespect previous publications
- ❖ Overestimate your contribution
- ❖ Excel in ambiguity and inconsistency
- ❖ Apply incorrect referencing of statements
- ❖ Prefer subjective over objective statements
- ❖ Give little care to grammar, spelling, figures and tables
- ❖ Ignore editor and reviewer comments.

BIBLIOGRAPHY



- Inspired by Prof. Witold Pedrycz lectures and remarks.



Preparing Research Articles

Bruce A. Thyer

Print publication date: 2008

Print ISBN-13: 9780195323375

Published to Oxford Scholarship Online: January 2009

DOI: 10.1093/acprof:oso/9780195323375.001.0001