



Writing Journal Paper(s)

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Publication for PhD Students

- The general concept of Ph.D. studies is to do **supervised research** under a mentor
- The student is expected to develop **research skills** over several years of training
- Completion of Ph.D. means that one is now capable of **independent research**, but is **not yet a seasoned researcher**
- All Ph.D. students are **expected to publish** their research and **learn** about research communications
- Imposes a **quality standard** through *de facto* external examination

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Publication for PhD Students

- **International standard** research work reflected through publications in international journals
- *Bona fide* contribution to the **global** scientific knowledge base
- Permanent **dissemination** of research findings

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How Good is Your Research Work?

- It is easy to make unverifiable claims about doing “world class” research...
- Can you prove it!
 - ◆ **Submission** – Are you willing to subject your work to the scrutiny of peer review?
 - ◆ **Publication** – Is your work judged by experts to be worth publishing?
 - ◆ **Impact** – Is your published work an important contribution that has some impact? Derivative works and citations of your paper may represent the impact of a paper.

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Choosing a Journal: Issues

- Has the journal published articles similar to yours in the past 2 – 3 years?
- Does the journal 'aim and scope' / 'description scope' match your work? Check journal web site.
- What is the level/quality of the journal vis-à-vis quality of your work?
 - ◆ Top journals (Nature, Science, Cell, etc.)
 - ◆ ISI-indexed journals (with impact factors)
 - ◆ Abstracted (non-ISI) journals of major publishers
 - ◆ National journals
 - ◆ Non-referred journals (***avoid these journals***)
 - ◆ Quality indices: impact factor, h5 index, etc.

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Choosing a Journal

- Watch out for internet scams claiming to be "journals"
- Make a tentative selection of journal
- Final selection may be with consultation with your guide, based on the quality of your work and readers to be addressed

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Type of Contributions

- Go to the journal web site and read 'instructions for authors'
- Determine category
 - ◆ Full length paper, Review paper, short note, technical note, etc.
- Type of contribution
 - ◆ Methodological (Theoretical, computational, etc.)
 - ◆ Data driven (experimental, primary/secondary data based, etc.)
 - ◆ Perspective
- Look for the structure of the paper (suggested by the journal, similar papers, etc.)

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Key Elements of a Paper

- Title
- Authors
- Abstract
- Key words
- Introduction
- Main text
 - ◆ Problem statement, Mathematical formulations, Solution schemes, Results and discussions
 - ◆ Materials and methods, Results and discussions
- Conclusions
- References
- Tables / Figures / Supplementary materials

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Organize Main Text

- Start with your strength, your work
- Choose a basic format for the main text
- Write down simple points (and not sentences) to determine flow of the work
- Support your points with figures and tables
- Discuss/ analyze them very briefly (points only)
- Discuss with your friends, batch mates, lab mates
- Review and rearrange/add/remove points
- Improve the points to sentences
- Pay special attention to flow/steps of your arguments
- Remember:
 - ◆ Reviewers don't know the details of your work

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Highlight Your Contributions

- Once you are reasonably confident with the main text, start drafting the entire paper
- **Highlight** your contributions (it is must if you are submitting to an Elsevier journal)
 - ◆ 85 characters, including space
 - ◆ No abbreviations
 - ◆ Clear and to the point
 - ◆ At least four points
 - ◆ Most difficult part
 - ◆ *Unless you are not clear about the contributions, nobody else would*

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Start Writing



Title and Authors

- Title is the most important part of your paper
- Title is the first impression of your work
- It influences whether a reader is interested in reading your paper (important beyond review stage)
- Take the help of your highlights
- Combine right words in correct order
- Title should reflect your contributions
- Should be interesting and fascinating
- It should neither be too short or too long
- Avoid "A study of ..." etc.
- Avoid acronyms, commercial product names
- Avoid regional focus, unless necessary
- Authors: List names of all the people who contributed to this work (discuss this with your supervisor)

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Abstract

- Abstract summaries your contributions in simple words
- There may be word limit (see journal site)
- Should make sense when read in isolation (use in abstracting/indexing, review request, etc.)
- A clear and accurate recapitulation of the paper
- Usually written as one or two paragraphs
- Words should be simple, jargon avoided, and abbreviations omitted
- Do not refer to any table or figure of the main text
- Citations are not usually included, unless absolutely necessary
- Most part is written in present tense

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Abstract: Structure

- One or two sentences of background information and importance of the larger objective
- The research question
- What was done to answer it
- Significant results and evidences
- The answer
- Implications / speculations of the answer
- Add keywords: generic, broad-based, and related the major concept of the paper
- Keywords help in reviewer identification
- Also visibility of your paper

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Introduction

- It should stimulate the reader's interest
- Should also provide background information
- Short and concise review of the literature
- Identification of the research gap that you want to fill
- Informal statement of the research question
- Very important part of the manuscript. Many papers get rejected because of poor start.
- Most part is written in simple past

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Introduction: Structure

- Start with a big picture, most relevant background issues (*global motivation*)
- End the first paragraph with relevance to your topic
- Use of statistics may provide depth
- Discuss about the background information on the topic
- What is known, what is believed, what is still unknown, what are the problems, etc.
- Add historical account of relevant research literature to support your arguments
- Provide special emphasis to recent papers (i.e., within past 5 years)
- Discuss key concepts and methods of these papers

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Introduction: Structure

- Avoid verbatim quotes except for key definitions. This is a form of **plagiarism** even with citations!
- Identify research gaps in some these studies (*specific motivation*)
- Don't be too harsh
- These research gap should lead to the scope of your study
- End the introduction with the research questions
- Explicitly declare your novelty and contributions
- Never make unnecessary claims
- Use qualifiers and disclaimers as appropriate
- Add to be expected results/outcome

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Introduction: Notes

- Special care should be taken for the claim of novelty and contributions
- You should be able to backup your claim
- This claim will go on permanent record for global scrutiny
- If this is not true, it is **Plagiarism** and/or **Ignorance**
- Highlight points help you

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Introduction: References

- Use valid and easily available references
- Most recent and relevant papers should be cited
- Avoid unpublished references
- Avoid unrelated self-citations
- Cite few papers, published in last two years in the intended journal, should be cited
- Do not club references, credit should be given where it is due
- Use citation style asked by the journal
- In the draft stage, Harvard style (Author, year) is better
- Reference management software may be used (BibTex, Zotero, Mendeley, EndNote, etc.)

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Main Text

- Now complete the main text
- Special emphasis should results and discussion
- Answer question(s) posed in the introduction with good support and compare with published results (including validations)
- Originality, novelty, and contributions are highlighted
- Report and explain discrepancies and unexpected findings
- Limitations and possible significance
- Be truthful in representing your result and analysis
- Do not summarize your results again in the discussion section

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Conclusions

- Start with a brief statement of the major findings and implications
- Should not summarize the results
- It is not abstract
- Emphasize novelty and originality
- Check against highlight points
- It should be self-contained
- Always end with future work/future directions
 - ◆ Things you haven't done
 - ◆ Things you may do in the future
 - ◆ Guide other researchers, but don't give away too many secrets

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Other Points

- Acknowledgement and funding sources
- Take special care for the quality and readability of the Figures and Tables
- Table and Figure captions should be self-explanatory
- Provide 'List of Table Captions' and 'List of Figure Captions'
- Include List of Symbols with possible SI units
- Use SI units in your papers (convert units, if taken from different source)

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Other Points

- Cover Letter is very important
- Usually taken care by 'corresponding author' (your supervisor)
- It should talk about the work done, novelty, and contributions in simple words
- For revised manuscript, prepare point-by-point response to reviewers' comments
- Highlight action taken
- Prepare marked manuscript (track-change mode is word)

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Writing Style: Notes

- Keep it simple and to the point
- Write **to express** and not to impress
- Avoid long sentences and repetitions
- Simple language is easier to understand
- Be consistent with either British *or* US spelling
- Be careful with words such as: will/shall, novel, significant, important, etc.
- Read it loud and correct
- Re-review your draft before submitting to others (specially to your supervisor) for comments
- Self review your paper 2-3 times (at least)
- Check it for plagiarism (Turnitin)

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In a Nutshell

Questions

Section of Paper

What did I do in a nutshell?	Abstract
What is the problem?	Introduction
How did I solve the problem?	Materials and Methods
What did I find out?	Results
What does it mean?	Discussion
Who helped me out?	Acknowledgments
Whose work did I refer to?	References
Extra Information	Appendices

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Concluding Thoughts

- Writing a manuscript improves with practice, it is a performing art
- The article will (eventually) be published in print with full citation details (i.e., volume and page numbers)
- Publication of an article isn't the end of the story.
- The true test of the value of your research is the interest it generates upon publication
- The writing of the paper is not a detached activity, but reflects the ideas underlying your research

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- https://ceprofs.civil.tamu.edu/ssocolofsky/downloads/paper_how-to.pdf (29 June 2015).
- And there is GOOGLE (materials and comics)

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I can't believe it!
Reading and writing actually paid off!.
- Matt Groening (1954 -), *The Simpsons*

Happy Writing....