

# Research Papers Writing

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## Important Points

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### Common Fallacies

1. Research First?
  - × Idea → Do Research → Write a Paper.
  - ✓ Idea → Write a Paper **FIRST** → Do Research → Reinforce the Paper.
2. Need Fantastic Idea?
  - × You need to have a Fantastic Idea before you can write a Paper.
  - ✓ Write down and give a Talk about **ANY** Idea.
3. Write to Impress?
  - × We write Papers mainly to impress others and gain recognition.
  - ✓ Good Papers and Talks are a fundamental part of **Research Excellence**.

### Goal

GOAL: Papers communicate Ideas, **infect** the mind of your reader with your Idea.

## Paper Contents

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### Abstract

< 4 Sentences > - About the Key Idea.

1. State the Problem
2. Why the Problem is interesting
3. What your Solution achieves
4. What follows from your Solution

It should:

- Be **simple**, just ONE "Ping"
- Be **100% explicit**: "The main idea of this paper is ..."
- About exactly ONE Idea, otherwise write many papers

Usually write the Abstract last.

### Introduction

< 1 Page > - About Problem background & you Contributions.

1. Describe the Problem
2. State your Contributions

It should:

- Be **short**, no more than ONE page
- Make a clear **List** of your Contributions
- Use **Forward References**: "We ... (see Section 4.1)"

### Problem Details

< 1 Page > - About Problem Details.

## My Idea

< 2 Pages > - About Idea Conveying & Presenting.

1. FIRST, convey your Idea with **Whiteboard Intuitions**
2. THEN, present the Details

It should:

- NOT contain your personal journey of discovery
- Choose the most direct route to the idea
- Use **Examples** and **Figures**

Use visual tricks (*Visio, ProcessOn, ...*).

## Solution Details

< 5 Pages > - About Details of your Solution.

1. Check each Claim in the Introduction
2. Give **Evidences** to every *Claim* (which should have Forward Reference towards this Section)
  - Analysis & Comparison
  - Theorems
  - Measurements
  - Case Studies

It should:

- Provide Evidence for EVERY Idea from yourself

## Related Work

< 1~2 Pages > - About Credits for Related Work

1. Give sincere & warm *Credit* to others

It should:

- NOT make others' work look bad
- NOT pretend it's your Idea if it's actually not

## Conclusion

< Half Page > - Be **brief**.

## Future Work

< Half Page > - About the future direction of this work.

1. Refer to the weakness of your work
2. Encourage other researchers to continue working on
3. Issues that you plan to address

Use *Grammarly* to check grammar mistakes.