

Communication in Computer Science

The written word

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A paper

- content
- form
- structure

Content of your paper

- Assumption: you have a message.
- See slides on “planning your paper.”

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Harsh reality

A badly written paper looks like a bad paper.

One language to rule us all

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English

One language to rule us all

English

How many native speakers here?

Recommendation

Improve your English ASAP:

- the spoken word (ear, mouth);
- the written word (eyes, pen / keyboard).

Homework (1/3)

- View your DVDs **in English**
with subtitles in English.

(So watching DVDs is educational now.) 😊

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Test: do you dream in English yet?

Homework (2/3)

Read **and listen to** an audiobook:

- Surely you're joking Mr Feynman
- Harry Potter and the Methods of Rationality
- The Lightning Thief (Rick Riordan)
- How to Train Your Dragon (Cressida Cowell)
- etc.

Develop some linguistic fluidity.

Homework (3/3)

Read books about technical writing:

- [The Elements of Style](#) (Strunk and White)
- [A Handbook for Scholars](#) (Van Leunen)
- [Towards Clarity and Grace](#) (Williams)
- [How to Write Mathematics](#) (Steenrod)
- [Lessons from a Lifetime of Writing](#) (Morrell)

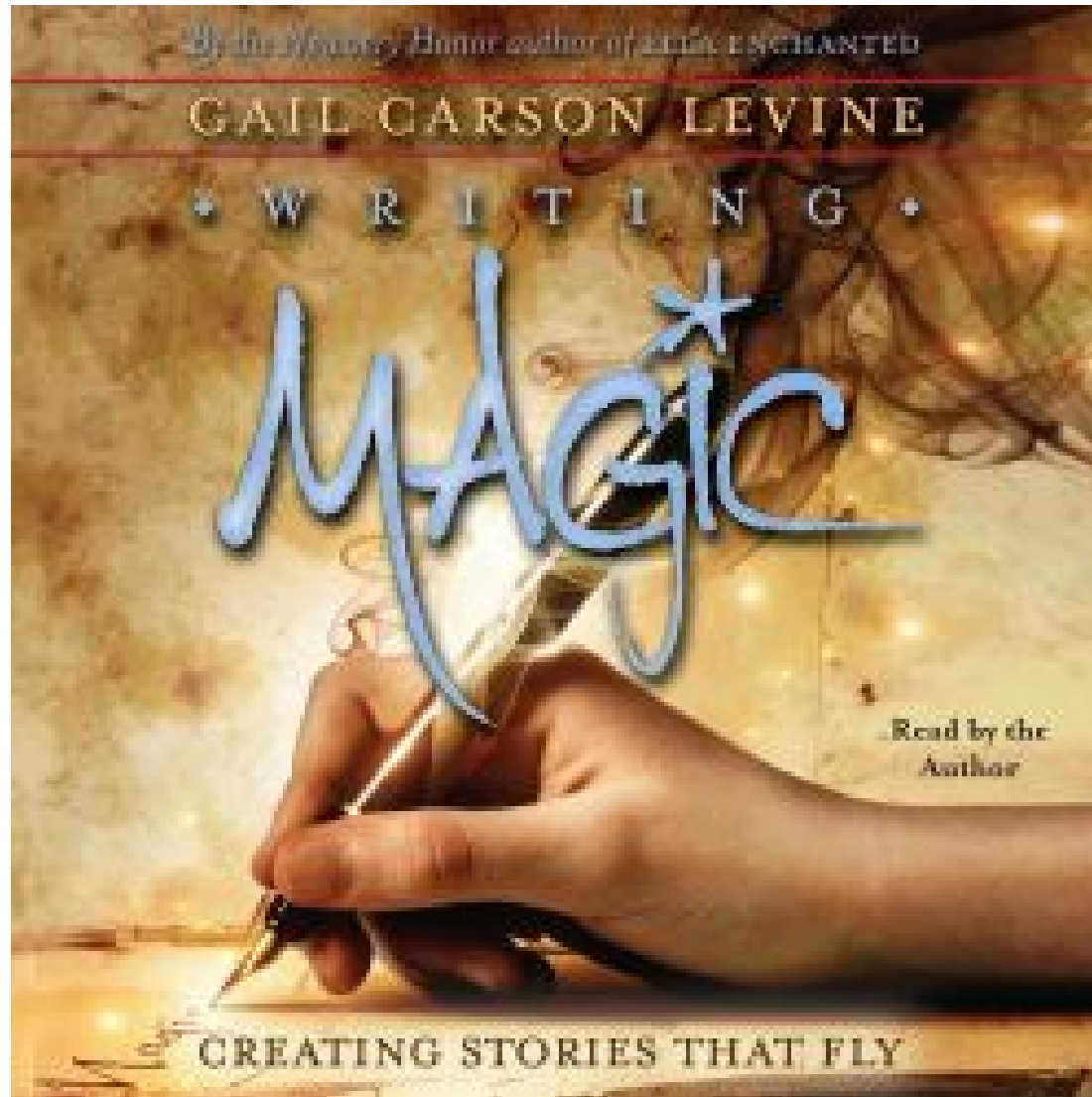
Grow some linguistic mindfulness.

Homework (4/3)

Heck, also read books about writing from your favorite author:

- [On Cooper's Writing](#) (Twain)
- [How to Write Science Fiction & Fantasy](#) (Card)
- [The Craft of Writing](#) (King)
- [Why I Write](#) (Orwell)
- [Zen and the Art of Writing](#) (Bradbury)

Example: Writing Magic



A shameless authority argument

It's not just learning a language,
for with a language come fables and proverbs.

A shameless authority argument

It's not just learning a language,
for with a language come fables and proverbs.

It is learning a whole value system,
a whole philosophy of life.

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– Lee Kuan Yew, 5 November 1972

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So, writing your paper

- have a title that attracts
- have an abstract that compells
- have an introduction that entices
- have related work that convinces
- have a content that confirms
- have a conclusion that solidifies

And prior to that

- look at your target audience
- look at successful previous submissions
(especially for grant proposals)

Titles

See the slides about

“structure and interpretation of scientific titles.”

Abstracts, viewed from outside (1/3)

Look at the abstracts of your favorite papers:

- why do you **like them**?
- why do you think **they are good**?
- what makes them **work**?

Collect your answers and compare them.

Are there commonalities in your answers?

Abstracts, viewed from outside (2/3)

Look at the abstracts of other papers:

- why do you like them less?
- why do you think they are not as good?
- what makes them not work so well?

Collect your answers and compare them.

Are there commonalities in your answers?

Abstracts, viewed from outside (3/3)

Now you have criteria about an abstract:

- the ones that make it work
- the ones that make it work less well

Talk with your PhD advisor and colleagues.

What are their own criteria?

Your eyes are now open.

Abstracts, viewed from inside

- Go through the 4 causes of your work.
- Why does this work matter at all?
- Why should this work matter to its audience?

Your abstract should reflect all these points
and be palatable from the outside.

Be consistent, locally

- Define first, use later, in that order.
- Make sure you
 - defined what you use, and
 - don't define something you don't use.
- Don't hesitate to add a section
“Prerequisites and Notation”
in the introduction.

Be consistent, globally

- Avoid throw-away sections.
- Revisit your killer example from the introduction.
- Consider having a running example.

Make sure to explain

If you include anything technical,

- code,
- theorem,
- tables, or
- graphics,

put explanations that can be read instead:

not all readers read everything.

A litmus test (1/2)

- Must your paper be read from the beginning?
- Can your paper be read out of order?
- Can your paper be read incompletely?

A litmus test (2/2)

Consider adding extra pointers in the narrative:

- “as introduced in Section 1.2”
- “as developed in Section 5”
- “as detailed in Appendix A”
- etc.

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Summary

Keeping in mind that **bad form hinders content**,
write something that is

- self-contained,
- progressive, and
- consistent,

and that does justice to your work.