

# Keys to effective technical writing and publishing

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# Importance of writing

- Writing plays a vital role in successful publication of your work
- Many people write as if for themselves, with little or no regard for clarity
- When a paper is written in such a way that no one can understand it, the work is likely to be ignored by your peers

# Abstract section

- Most people will not read beyond the abstract if it tells nothing about the details of your paper
- Avoid writing abstracts as if they were tables of contents, with the phrases *is described, is discussed*
- Make your abstracts informative

# Example

Saturable dyes for laser Q switches are found to degrade with time. The cause of this degradation is discussed and a possible solution is proposed.

would be better as

Saturable dyes for laser Q switches degrade with time. The blue light from the flashlamp causes the degradation of the dye, and the dye's life may be extended by replacing the cell's windows with red filters.

# Introduction section

- The Introduction section should be more than a listing of references to earlier work
- Write for someone who is not fully conversant with your subject
  - give as much background as you can
  - write it as simply as you can
- Do not forget to state what is new about your work

# Conclusions section

- There is no reason you have to have a Conclusions section
- If you have something to say, state your conclusions firmly

# Example

Don't begin

We have used photothermal deflection to measure the loss in a waveguide.

Instead begin

Photothermal deflection **is a promising technique** for measuring the loss in a waveguide.

Then go on to support your conclusion

# Writing Clearly

- Some things to avoid
  - Vague words, redundant words, and uncommon abbreviations, dead words
  - Switching between words
  - Ambiguous synonyms
  - Cliches
- Lets look at some examples



# Vague words

Example:

We used a **device** that dispersed the light into its constituent colors.

Tell the reader what kind of device:

We used a **prism spectrometer** to disperse the light into its constituent colors.

# Redundant words

Example:

The devices generated two voltages,  
one **being** proportional to the E field  
and one to the H field.

# Uncommon abbreviations

Example:

It is clear that **DFW** has more effect  
on SNR than **DFR**

would be better as

**Defocus error when writing** has more  
effect on SNR than **defocus error**  
**when reading**

# Switching between words

Example:

We calculated the **mean** and standard deviation; the **average** was 17.0.

This is a falsely elegant way to say

We calculated the **mean** and standard deviation; the **mean** was 17.0.

# Ambiguous synonyms

Example:

**As** we were measuring the current, the voltage dropped.

Does this mean

While we were measuring the current, the voltage dropped,

or does it mean

Because we were measuring the current, the voltage dropped?

# Cliches

Example:

It is clear from Fig. 3 that ...

Clear to whom?

Better to rewrite:

Fig. 3 shows that ...

# Plagiarism

- “Quoting someone’s words precisely without attributing the words to the original author or using quotation marks is plagiarism. So is paraphrasing someone’s idea without attribution.” – Matt Young
- Often caused by failure to cite the sources that you have used

# IEEE's Code of Ethics

“We, the members of the IEEE, ..., do hereby commit ourselves to the highest ethical and professional conduct and agree:

...7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to **credit properly the contributions of others.**”



# Thesis Writing

- The sections on literature review and methodology should be written well before the research is finished
- Begin writing the main sections once you obtain some initial results
- Errors or inconsistencies are more likely to be spotted if you allow adequate time for revise, revise, revise

# Technical Speaking

- Give practice talks in informal group
- Don't pack too much text on one slide
- Do not rush through your talk
- Use examples to express your ideas clearly

# Publish or Perish

- **Salami strategy:** Reduce each result to the least publishable unit
  - adds weight to the resume
- **Impact strategy:** Don't try to put every idea into a paper; save only your most significant idea for a paper
  - more favorably regarded by your peers

# The Importance of Quality

“Papers of poor quality do more than waste printing and publishing resources; they mislead and confuse inexperienced readers, they waste and distract the attention of experienced scientists, and by their existence they lead future authors to be content with second rate work.”

G. K. Batchelor (1981)

# Where to send papers?

- Send papers to conferences or journals that have a proper peer-review system
- Beware of conferences that send unsolicited invitations to submit papers
- Beware of journals that do not review papers seriously or have very low acceptance standards

# Prank on CSSE 2008

- A conference paper, Towards Simulation of E-commerce, appeared in IEEE Explore in 2008
- This paper was computer generated gibberish, with a fictitious author named Schlangemann
- A “Quality of Conference Articles in Explore” committee was formed in 2009 to suggest measures for avoiding such problems in the future
- For the whole story, visit the official herbert schlangemann blog at:  
<http://diehimmelistschoen.blogspot.com/>

# Remarks

- Technical writing and publishing are skills that one learns gradually
- Students should be taught technical writing (and speaking) as part of the curriculum

# Question

- Quality assessment of conferences – emerging research area?
  - “An Ontological Approach for the Quality Assessment of Computer Science Conferences”, ER Workshop 2007, LNCS 4802, 202-217.



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