

Team Practical Course on AR and VR Research

06 – Best Practices Scientific Writing



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Reminder – Structure of a Research Report

- Abstract
- 1. Introduction
- 2. Foundations
- 3. Related Work
- 4. Approach
- 5. Case Study
- 6. Summary and Outlook

Reminder – Typical Mistakes

- Wrong motivation
- Unimportant foundations
- No or too much related work
- Inclusion of source code
- No separation between approach and case study as well as between results and discussion
- Wrong or too far reaching conclusions

Writing Text (in Computer Science)

- Writing as “we”
 - Bad: “Then I programmed the software.”
 - God: “Then we programmed the software.”
- In English: use active
 - Bad: “Then the software was programmed.”
 - God: “Then we programmed the software.”
- Only two tenses
 - Present for describing your approach
 - Past for describing what happened during the case study

Writing Text (in Computer Science)

- “The sky shone in a marvelous cyan blue and the small white clouds flew like powder over the infinite horizon.”
- Short sentences
- Each sentence is its own fact/statement
- No shiny/metaphoric adjectives/adverbs
- Better: “The sky was blue. There were 10% clouds.”

Writing Text (in Computer Science)

- No paragraphs with only one sentence
- No different types of paragraphs for pseudo structuring
 - For further structuring, use headings
- No forward references
 - They are a hint for a bad structure

Writing Text (in Computer Science)

- “Having a look at our data, obviously the parameter change shows an effect.”
- In science, nothing is “obvious”, “apparent”, ...
 - Everything needs to be proven, e.g., through numbers/statistics

Writing Text (in Computer Science)

- Abbreviations
 - Introduce them only once (use Latex features)
 - If already introduced in abstract, reintroduce in main text
 - Correct: “Virtual Reality (VR) is cool. It allows you to... In VR, ...”

Writing Text (in Computer Science)

- Briefly describe figures and table
- Bad:
 - “Then we measured the values (Table 1). From this, we derive that...”
- Good:
 - “Then we measured the values. We list them in Table 1. The columns represent... The rows show... For example, for XYZ (column 1) the value of BLA (row 3) is 24,5. This is the highest value of BLA for all categories of ABC. From this, we derive that...”

Writing Text (in Computer Science)

- Do not repeat yourself
 - Every information is included only once
 - But: it is OK to reference an information
 - For example:
 - In Foundations (Section 2):
 - “Consider a triangle, with the borders a , b , and c . If the angle between a and b is 90° , then $a^2+b^2=c^2$. This is called the Pythagorean theorem...”
 - Later in Report:
 - “As mentioned in Section 2, for right triangles $a^2+b^2=c^2$. We use this relationship to ...”
 - “Then we use the Pythagorean Theorem (see Section 2) to ...”

Writing Text (in Computer Science)

- Consistent citations
 - Entries in bibliography also for websites
- Typical citation style in computer science:
 - “A state-of-the-art consumer VR device is the HTC Vive [5]. It consists of...”
 - “Harms et al. describe an automated usability evaluation [8,22-24]. In their paper, the authors ...”

Writing Text (in Computer Science)

- Cite consistently
 - The citing style is less important than consistency
 - Ensure clarity of references
 - No Way Out (2004) was an American professional wrestling pay-per-view event produced by World Wrestling Entertainment (WWE), held on February 15 at the Cow Palace in Daly City, California. Sponsored by THQ, it was the sixth event produced under the No Way Out name and starred wrestlers from the SmackDown! brand. [1]
 - No Way Out (2004) was an American professional wrestling pay-per-view event produced by World Wrestling Entertainment (WWE), held on February 15 at the Cow Palace in Daly City, California. Sponsored by THQ, it was the sixth event produced under the No Way Out name and starred wrestlers from the SmackDown! brand [1].
 - Following Author et al. [1], No Way Out (2004) was an American professional wrestling pay-per-view event produced by World Wrestling Entertainment (WWE), held on February 15 at the Cow Palace in Daly City, California. Sponsored by THQ, it was the sixth event produced under the No Way Out name and starred wrestlers from the SmackDown! brand.

Writing Text (in Computer Science)

- Footnotes only where really required
 - Adding “comments” to too many sentences shows that something is wrong with the overall text.
- Acknowledgments only in Acknowledgements
 - Bad: “Thankfully, the institute allowed us to use a Samsung Galaxy S7...”
 - Good: “We used a Samsung Galaxy S7...”

Task for upcoming weeks

- Self dependent learning
 - Writing style in computer science
- Practical Part
 - Continue working (case study, reports)
 - Send me your reports
- Presentation
 - Current state

Questions???

