

Ethical Guidelines for the Authoring of Academic Work

Introduction

In taking up academic studies at RWTH Aachen University, students learn how to work in a scientifically sound manner. Unlike working at a for-profit company or in other areas, academic work aims to benefit humanity altruistically. As such, it is an integral part of the ethics of academic integrity that research results are published and can be used freely by all. This environment requires everyone to have a high standard of integrity, a vital requirement of academic work. Although forgery of results, their willful misinterpretation, or even the declaration of the results of others as own results are very rare, such few exceptions are not hushed up, but are routinely brought to public attention to much dismay. The (academic) careers of dishonest perpetrators usually suffer catastrophic damage.

Even though there is no single international regulatory agency in academia, which enforces compliance with these rules, the high ethical standards in the scientific community self-regulate this process. However, the purpose of so-called Peer-Review, during which scientists anonymously evaluate the submissions of their colleagues, is the assurance of high quality contributions to research publication venues, not the determination of a researcher's honesty (unlike doping tests in sports, for example). Besides the main goals of the study program – learning the fundamental concepts of computer science and honing the skills of independent problem solving in a rapidly changing world – another goal is the strengthening of values such as academic integrity among our graduates.

Academic work

Sound academic work is not only characterized by obvious ethical guidelines. Clearly, fraud, plagiarism, and forgery are prohibited. In addition, assigning proper credit to all co-authors and correct citing of used source materials should be common practice. Without the necessary contribution, co-author credit should neither be requested, nor maliciously obtained. Sound academic work constitutes much more. Relevant data and results have to be published even if they contradict the author's hypotheses. Results have to be both comprehensible and reproducible; proofs and results have to be made available. In particular, neither the scientific community nor the public may be cheated on knowingly. The public's trust of the author's expert opinion should never be abused.

One should be careful when preparing academic papers or other documents. Specifications and recommended revisions must be taken very seriously.

Plagiarism

Plagiarism is the declaration of the results of others as one's own. During the course of a study program, plagiarism could occur during the preparation of written material, such as homework and seminar papers, submissions during a lab course, including the authoring of computer programs, as well as the Bachelor-Thesis, or Master's-Thesis.

In academic work, it is common and actively encouraged to show new results in the context of what is already known. However, it is very important to properly identify which are one's own results and which are the results of others. When the references to other sources is missing, the implicit assumption is that those are the results of the author. This will be the case particularly with graded works where help from third parties is expressly forbidden. During group work, such as specific group homework assignment, sources and contributors have to be clearly noted.

There are some established techniques for labeling other researcher's results. However, these can differ significantly between academic fields. Works in computer science usually have a numbered bibliography included at the end of the work; these are quoted in the text by the use of a number in squared brackets. An example of such rules can be found in the Chicago Manual of Style [1].

Great care should be taken when directly quoting others. When quoting in verbatim, the text should be surrounded by double quotes, and has to be cited unaltered. Even misspellings should not be corrected, the only exception being the addition of comments in square brackets. This technique is often used to mark omitted parts with ellipses [...], verbatim transcription that are surprising, uncommon, or archaic using [sic], or giving additional context clues. A (construed) example could be:

“Then he [teacher] wrote potatoe [sic] on the blackboard.”

In the field of computer science – as opposed to the certain fields in the humanities – quoting verbatim is very rare. Usually, the results of others are paraphrased in one's own words and expressed in a different notation.

While, to avoid plagiarism, it is only necessary to make it clear that the results are not one's own. However, it is common academic practice to provide an exact reference to the source material.

Lastly, a special case of plagiarism is self-plagiarism, which is reusing one's own already published results in another academic work. To avoid self-plagiarism, authors should reference their previous original work.

Copyright violations

Copyright infringement is using external material, such as texts, pictures, and computer programs, illegally in one's work. Cases of plagiarism may or may not constitute a copyright infringement. While plagiarism is a breach of ethical guidelines or, in the case of exams, a breach of exam regulations, copyright infringement is a breach of the law. For exams, there is a low risk of copyright infringement. However, as copyright law is very complex, a person using modern methods of reproduction

and copying – especially electronic media – may encounter more problems than that person may have anticipated through an intuitive understanding of the law.

Copyright in Germany acknowledges the right to quote in §51 UrhG (German Copyright Act) – provided that the use is to the extent required by the specific purpose. One explicitly permitted purpose is to illustrate an independent scientific work with the help of other individual works (“wenn einzelne Werke nach der Veröffentlichung in ein selbständiges wissenschaftliches Werk zur Erläuterung des Inhalts aufgenommen werden”). Therefore, it may be permitted to take copyrighted works entirely or in parts for the purpose of quotation. It is important that the taken work is used within an independent scientific work to illustrate its contents (“selbstständigen wissenschaftlichen Werk zur Erläuterung des Inhaltes”). This may also include figures. A correct attribution must be given for the quoted work.

Specific Guidelines

The Department of Computer Science at the RWTH Aachen University attaches great significance to the compliance with all the principles of sound academic practice during the course of the study program. We expect our students to demand this of themselves. While a strict regime of controls will be avoided, as this goes against the department’s ideal of responsible students and would not allow for a good work environment, any breach of this trust will be dealt with harshly. Consequences of misconduct are regulated by the currently applicable exam regulations (Prüfungsordnung).

The following guidelines should serve as general reminders for sound academic practice:

1. Written assignments must be accomplished independently without undue outside help; used sources and aids must be properly cited.
2. Presentations, including all slides, must be prepared independently without undue outside help; used sources and aids must be properly cited.
3. During exams, only explicitly allowed aids may be used.
4. Homework assignments have to be done alone or in designated groups.
5. During group work, all members must contribute reasonably. Without such contribution, a person may neither be named as a co-author, nor ask for inclusion to the author list.
6. All authorship attributions have to be correct; relevant information may not be withheld.
7. Undue aid may not be offered to others.

Further, refer to §7 of the *Grundsätze zur Sicherung guter wissenschaftlicher Praxis der Rheinisch-Westfälischen Technischen Hochschule*.

References

- [1] *The Chicago Manual of Style*. University of Chicago Press, 14th edition, 1993.