Proseminar - Grafik, Computer Vision und Maschinelles Lernen

Seminar - Fortgeschrittene Themen aus Computer Graphik und Computer Vision

1. How to read a scientific/technical paper

Algorithm

Three passes:

1. Quick scan

2. Thorough reading

3. Detailed reading (virtual re-implementation)

[S. Keshav – How to read a paper?
ACM SIGCOMM Computer Communication Review,
Vol. 37(3), July 2007]

1st - Quick Scan

– Read title, abstract, intro, overview

– Read section and sub-section headings,
ignore everything else

– Read conclusion

– Glance over the references

2nd - Thorough reading

– Read everything
– Look carefully at figures
– Mark interesting references

Outcome:

– You should have grasped the content
– Make decision if a third pass is required, what to focus on
– What additional reading is required?

3rd Pass

- Fully understand the paper
- Virtually reimplement the paper

Questions

- What problem addresses the paper?
- Why is the problem relevant?
- Why is it a hard problem?
- Who might be interested?
- Who are the authors?
- What do the authors claim as their contribution?
- Did they reach their goals?
- What are other existing solutions?
- Are there missing references?
- What is the novel idea?

Questions

- Summarize the individual steps of the approach.
- Is each step well presented?
- Do the authors present enough detail so that the work could be reproduced?
- How could the presentation be improved?
- Comment on the results.
- How good are they?
- How complicated is it to achieve them?
- How much interaction is required?
- What are the limits?

Questions

- – Are the limitations clearly stated?
- – How could the technique be improved?
- – Could it be used in some other context?
- – Summarize the main points.
- – Is the paper length adequate?
- – How would you judge the paper?

2. How to write a research paper

How to write a research paper

According to the IEEE *(Institute of Electrical and Electronic Engineering) recommendations*

The paper should ordinarily consist of a
– Title
– Abstract
– Introduction
– Body of the Paper
– Conclusions

How to write a research paper - Title

- – The title should be short if possible but not so short that the subject will not be indicated clearly.
- – The title, therefore, should be carefully chosen

How to write a research paper - Abstract

The abstract should state concisely, in less than 200 words:

1. What the author has done
2. How it was done (if that is important)
3. The principal results (numerically, when possible)
4. The significance of the results
5. The abstract should not be merely a list of general topics covered in the paper

How to write a research paper – Introduction

The introduction should briefly tell

1. The nature of the problem
2. The background of previous work on the problem, including published work
3. The purpose of the paper

How to write a research paper – Body of the Paper

- Communicate information effectively to the reader
- Put long, purely mathematical derivations in appendixes to avoid interrupting the main train of thought
- Figures, tables, curves, etc., should be labled so that they are self-explanatory

How to write a research paper – Conclusion

The concluding discussion should cover
– What is shown by this work
– The significance of the results
– Limitations and advantages

Where applicable
– Application of the results
– Recommendations for further work