Scientific Communication and Scientific Writing

(MA-INF 3107)

SS 2017
A New Lecture? By a Nearly Retired Professor?

- SCSW is a new lecture delivered here in Bonn for the 1st time this semester.

- As for now, SCSW will only be delivered twice: this year and next year – if SCSW will be offered any more after 2018 (and, if yes, by whom) is completely open.

- It is clear, however, that Prof. Manthey will retire on February 28, 2019 – i.e., there are just three additional teaching semesters left for him (after the present one).

- Nevertheless, he believes that a course like the one SCSW is supposed to become is worthwhile (even necessary). It will be worth the effort for him to design a lecture like this – and for each of you to attend it. Whether this belief is justified remains to be seen – give it a try!

- The „economic“ benefit of passing the SCSW exam will be 4 credits – and a grade.

- The decision to attend the exam will have to be made by June 21 (end of registration period). And: You can still step back from registration till one week before the exam!

- BA graduates from Bonn will learn more than they already did in TdWA!
Modules Offered by the IDB Group

IDB (Intelligent Databases) Group:
Prof. Dr. Manthey, PD Dr. Behrend, MSc Vahdati

Intelligent Information Systems
(MA-INF 3203)
(9 CP)

Temporal Information Systems
(MA-INF 3302)
(6 CP)

Scientific Communication and Scientific Writing
(MA-INF 3107)
(4 CP)

Seminar
Selected Topics in Intelligent IS
(MA-INF 3210)
(4 CP)

next 4 semesters

WS 2017/18 and
WS 2018/19

SS 2018 and
SS 2019
Calendar of this Semester

24.4.
1.5. May Day
8.5.
15.5.
22.5.
29.5.
5.6. Whitsun Monday
12.6.
19.6.
26.6.
3.7.
10.7.
17.7.
24.7.

Introduction

Relevant for exam

10 lectures

Summary

Exam (written): Monday, July 31, 2017 (most likely)

Repeat exam: Thursday, September 21, 2017 (most likely)
There will be no exercises for SCSW!

(This is due to a lack of time and resources – however, plenty of encouragement for your own activities apart from the lecture will be given.

But it won‘t be controlled if you do anything just because you are interested and want to know more!)
Lecture Homepage

https://pages.iai.uni-bonn.de/manthey_rainer/SCSW2017/

- Slides for download
- All communication about SCSW here!

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Master Programme in Computer Science

Lecture "Scientific Communication and Scientific Writing" (SS 2017)
- MA-INF 3107 -
Prof. Dr. Rainer Manthey

News

- The 1st lecture on "Scientific Communication and Scientific Writing" (short: SCSW) will take place on April 24, 2017. SCSW will begin at 2 p.m. c.t. (according to traditional academic speaking), i.e., at 14:15 every Monday afternoon. The lectures will last 90 minutes, thus ending at 15:45. SCSW will be read in lecture room A 207 in the Romerstrasse building. NEW

- On May 1st and on June 5th no lecture will be delivered due to public holidays on the respective dates. Thus, 12 lectures will be held this semester (of which 10 will be presenting contents relevant for the final exam). NEW

- MA-INF 3107 is suitable for master students of all semesters. SCSW will come without exercises! NEW

- The 1st (written) SCSW exam will most likely take place on Monday, July 31st, 2017 (which means straight at the begin of the lecture period, directly after the end of the lecture period lasting till July 28). Exam dates are currently under negotiation, thus no final commitment to this date is still possible. September 21 is currently planned for the repeat exam. Exams are expected to last two hours, they will be graded, and SCSW is expected to have a workload "worth" 4 credits. This still requires agreement by the Head of Exams (to be decided very soon). NEW

- Have a look at the follow-up pages by using links at the left-hand side. Page "About" sketches what this (new) lecture will be all about, this page will be made available soon after the first (introductory) lecture date on May 24. On the other page "Lecture" you will find an overview of the schedule of the lecture (and the exercises), including – during the course of the semester – the topics of each lecture/exercise and the slides for downloading. NEW
Sources for Additional Reading

Joseph E. Harmon, Alan G. Gross
„The Craft of Scientific Communication“
University of Chicago Press (2010)
240 pp., ~ 30 €

Angelika H. Hofmann
„Scientific Writing and Communication“
Oxford University Press (2nd ed., 2014)
752 pp., ~ 33 €

Justin Zobel
„Writing for Computer Science“
300 pp., ~ 43 €
What is Science?

If speaking about specific properties of communication and classifying them as „scientific“, we ought to ask what „science“ itself means (and where it’s limits are).

Here are a few quotes on this taken from the current state of (English) Wikipedia (as of April 24, 2017) under the search term „Science“. Whether these are scientific statements themselves is open!

Science … is a systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe.

Contemporary science is typically subdivided into the natural sciences, which study the material universe; the social sciences, which study people and societies; and the formal sciences, which study logic and mathematics.

The formal sciences are often excluded as they do not depend on empirical observations. Disciplines which use science, like engineering and medicine, may also be considered to be applied sciences.

Science in its original sense was a word for a type of knowledge rather than a specialized word for the pursuit of such knowledge.

In particular, it was the type of knowledge which people can communicate to each other and share.
Science is „under attack“ from various directions at present!
Did you ever ask yourself:

Am I a scientist?

Soon each of you will have gained a degree called

Master of Science in Computer Science.

That answers the question posed above!

Yes, I am.
There are many different kinds of audience to which scientists are motivated to submit their results and opinions: Each of them has to be addressed in an appropriate style!
Topic of this Lecture in the More Narrow Sense

This lecture will mainly be concerned with the topic SCSW with this focus/restriction:

Communication of original scientific results of individuals (or of entire research teams) to other experts within their scientific community in written form.

- Main form of scientific documents for this kind of communication:
  - Research articles

- Main types of collections of articles published jointly:
  - Proceedings of conferences (and other scientific events)
  - Volumes of journals (and other scientific periodicals)

- Other document types relevant in this context:
  - Textbooks and other monographs
  - Academic theses
  - Research reports
Reading Books vs. Online Access
Physical Libraries vs. Digital Libraries

At least in Computer Science:

Physical Libraries are quickly disappearing entirely!

Thus „touching“ a scientific book, an article, a thesis is possible far less frequently than 10 years ago.

Today: Immense collections of scientific documents are available online in digital libraries offered by all kinds of organisations (including publishing houses). Some of these sources are free of charge, but still access isn’t free for most.

Open Access is a hot topic in science worldwide!
An Example of a Digital Library: The ACM DL
How to Find and Identify Scientific Sources?

• In „the old times“, libraries were „indexed“ with catalogues pointing out what was available just in the respective library about a certain topic, with a certain title, from a certain author.

• It was difficult, however, to get an overview of every publication addressing a particular topic, or having information about all the publications produced by a particular author, or to know about everything presented at a certain conference.

• In the age of search engines, nearly all questions can be answered using web-based services. That seems to be like „heaven“ – but it may turn out to be like „hell“, too!

• There is an increasing number of dedicated services for searching (and finding) scientific literature by now. Just Googeling for science is not a good idea (in most cases)!

• Knowing where to search (and how to) and knowing how to use the results of such scientific bibliographical tools requires a lot of experience.
Google Doesn‘t Know Much About Your Professor
Using Google Scholar Instead: A Dedicated Science Search Engine

Rainer Manthey
Professor of Computer Science, University of Bonn, Germany
Databases, Information Systems
Bestätigte E-Mail-Adresse bei cs.uni-bonn.de - Startseite

SATCHMO: a theorem prover implemented in Prolog
R. Manthey, F. Dyb
9th International Conference on Automated Deduction. 415-434

A uniform approach to constraint satisfaction and constraint satisfiability in deductive databases
F. Dyb, H. Decker, R. Manthey
Advances in Database Technology—EDBT’98, 488-505

Checking Consistency of Database Constraints
F. Dyb, R. Manthey
Morgan Kaufman

Integrity verification in knowledge bases
F. Dyb, B. Martens
Logic Programming, 114-139

Chimera: A model and language for active DODD systems
S. Ceri, R. Manthey
East-West Database Workshop, 3-16

Consolidated specification of Chimera
S. Ceri, R. Manthey
idea.cpsi.polimi.it, Milan, Italy. Tech. Rep. IDEA...

Proving finite satisfiability of deductive databases
F. Dyb, R. Manthey
CSL’97, 44-55

Consolidated specification of Chimera (CM and CL)
S. Ceri, R. Manthey

Reflections on Some Fundamental Issues of Rule-based Incremental Update Propagation.

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Scientific Communication/Writing
Trying to Use Google Scholar as a Digital Catalogue

SATCHMO: a theorem prover implemented in Prolog
F. Manthey, E. Por - 9th International Conference on Automated Deduction, 1989 - Springer

Checking Consistency of Database Constraints
F. Pry, R. Manthey - 1986 - epub.uni-muenchen.de

Integrity verification in knowledge bases
F. Pry, R. Manthey, B. Martinez - Logic Programming, 1992 - Springer

Chimera: A model and language for active OODB systems
R. Cast - R. Manthey - East-West Database Workshop, 1995 - Springer
Using a Digital Catalogue to „Trace“ a Scientists Output
Who are the Best Scientists? Which are the Best Papers?

- There is a lot of **competition** going on in science – most of it based on publications.

- Every research article is **reviewed** (more or less) intensively before being accepted for publication at conferences or in journals. **Acceptance rates** in leading conferences are very low, that means:
  - An enormous amount of written scientific documents are **rejected** once (or many times) before ever being published anywhere.
  - Another high amount of documents will **never** get published at all!

- Nowadays, „success“ of publications is **measured** with increasing sophistication (**Bibliometrics**, Scientometrics):
  - Journals/conferences are ranked according to bibliometric criteria.
  - Academic **publishers** are ranked based on the rank of what they publish, too.
  - Influence **researchers** have on others is measured with increasing precision. (citation indexes, impact factors)

- Investigating scientific publications scientifically is a new **subarea of research** (and a topic of entire research projects, even communities) already!
A Web Analytics Approach for Appraising Electronic Resources in Academic Libraries

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Introduction
A large research university can spend tens of millions of dollars or more annually on electronic resources (Furlough, 2012). It has become common for research libraries to spend large portions of their collection budgets on these resources; ongoing annual subscriptions account for nearly 70% of the collection budgets in academic libraries (Kyrrilidou, M., Morris, S., & Roedbeck, 2013). When libraries stored only physical copies of journals, there were limitations based on physical space within the library for how many journals a
Recent Example of a Conference in the Database Field: ADBIS 2017

Any Good? Even Top? – Helpful for Your Career?

Worthwhile Attending? Submitting to?
Any „Hot“ or at Least Relevant Topics? Why to go?

- Any „experts“ for these topics to be present?
- Any topic outdated?
- What is missing?
Is ADBIS 2017 Supposed to be a „Good“ Conference?

The ADBIS 2017 proceedings will be published in the series Lecture Notes in Computer Science (LNCS).

LNCS/LNAI/LNBI is published, in parallel to the printed books, in full-text electronic version in Springer digital library SpringerLink; e.g., for the ADBIS 2016 predecessor proceedings, LNCS 9809, please see http://www.springer.com/gp/book/9783319440385.

The best paper with students as first authors will receive an award.

Best papers of the main conference will be invited for submission in special issues of the ISI-indexed journals Information Systems (http://www.journals.elsevier.com/information-systems/) and Informatica (http://www.informatica.si/).
Is this any reliable? What does „B“ mean? Who decided about this? On which basis?

ADBIS (conference series) ranked as „B“.
The best papers will be invited to be published in a special section of the International Journal of Applied Mathematics and Computer Science (AMCS) (De Gruyter Publisher).

AMCS is on the Thomson Reuters master journal list.

AMCS Impact Factor for 2015: 1.037 and 5-Year Impact Factor: 1.151

Notice that AMCS is an open-access journal with a publication fee of 300EUR/page for papers of 8-12 pages.

The publication is scheduled for the first half of 2018. The selected workshop papers will have to be extended to a full size of 10-12 pages (AMCS style) and will have to include original research contributions. The final acceptance for the Journal will be based on a standard reviewing process.

The best papers will be invited to be published in a regular issue of journal Foundations of Computing and Decision Sciences (De Gruyter Publisher).

FCDS is on the Thomson Reuters Emerging Sources Citation Index.

The publication is scheduled for the first half of 2018. The selected workshop papers will have to be extended and will have to include original research contributions. The final acceptance for the Journal will be based on a standard reviewing process.
What About the Quality of Those Who Judge About Papers at ADBIS?

Heads of Program Committee:
Selecting PC members – Making final decision about accepted papers
Who elected them? Good choice?

90 (!) members of this committee – altogether responsible for evaluating quality of submissions:
All qualified to do so? Are all of them „good“? Performance checked?
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Exam Topics?

0 Organisation and Motivation
1 How do Scientists Communicate Among Each Other?
2 The Scientific Publication Process
3 Libraries and Catalogues: Analogue and Digital
4 Bibliographical Metadata and Literature Search
5 „The Good, the Bad, and the Ugly“: On Measuring Quality in Science
6 Principles of Scientific Writing

Probably the easier part:
Mostly „hard facts“ – fewer opinions
Definitely „exam stuff“!

Probably the harder part:
Mostly experience and opinions – less facts!

In the exam? We will see!
If scientific **writing** already is an art, . . .

. . ., what about scientific **reading**?
Up Till Now: Mostly Questions!

Having many open questions asked is a good thing for a new lecture (initially). Answers will start coming on Monday, May 8, i.e., in two weeks from now!
SCSW: Work in Progress!

- This lecture has not been „taken from a can“, it is not based on any book or any pre-fabricated script, or on any set of (foreign) slides.

- It will be „freshly cooked“ instead – cooking may succeed, or fail. Results may meet your taste and expectations, or not.

- How to properly teach this topic is an open problem/question of academic didactics.

- By now, there is an enormous amount of „material“ around devoted to these questions.

- Which of these sources will turn out to be useful (or even: valuable) remains to be tried and tested!

- Next year, SCSW will already look quite different from in 2017. Your feedback can make it look better!
Our New „Home“ – From October Onwards (Hopefully)!

New Lecture Hall Building
New CS Institute and B-IT