



Introduction to Scientific Working

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Keywords

acknowledgement awards beamer bibliography CORE ranking DBLP
conference editorial board generative AI Google Scholar h-index impact factor
journal \LaTeX LIPIcs LNCS open access plagiarism presentation
program committee rebuttal review submission TikZ workshop ...

Types of Scientific Works

- ▶ seminar report
- ▶ bachelor thesis
- ▶ master thesis
- ▶ PhD thesis
- ▶ habilitation thesis
- ▶ workshop paper
- ▶ conference paper
- ▶ journal article
- ▶ book chapter
- ▶ book

Outline

1. Organisation
2. LaTeX
3. Conferences
4. Topic Assignment
5. TikZ
6. Homework
7. Announcement

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Exemplary Bachelor Theses

- ▶ Number Link Benjamin Rupprechter 2009
- ▶ Kurodoko Johannes Koch 2020
- ▶ Five Cells Diana Gründlinger 2023

Common Ingredients

- ▶ appendices
- ▶ bibliography
- ▶ chapters/sections
- ▶ figures
- ▶ footnotes
- ▶ **formulas**
- ▶ hyper links
- ▶ **lists**
- ▶ plots
- ▶ program code
- ▶ screen shots
- ▶ table of contents
- ▶ tables

Some useful Tikz libraries:

```
\begin{itemize}
\item
arrows.meta
\item
calc
\item
matrix
\item
patterns
\item
shapes
\item
trees
\end{itemize}
```

SFC

- ▶ **enumerate** environment for numbered list

```
\begin{enumerate}
\item
first level
\begin{enumerate}
\item
second level, first item
\item
second level, second item
\begin{enumerate}
\item
third level, first item
\item
third level, second item
\end{enumerate}
\end{enumerate}
\end{enumerate}
```

SFC

- ▶ lists can be nested
- ▶ bullets and numbers can be changed
- ▶ **description** environment for definition list

```
\noindent CORE ranking:
\begin{description}
\item[A$^{*}$]
exceptional (flagship conferences)
\item[A]
excellent
\item[B]
good to very good
\item[C]
sound and satisfactory
\item[--]
national / regional / Australasian
\end{description}
```

SFC

Three Writing Modes

- ① paragraph mode
- ② left-to-right mode
- ③ **math mode**

Math Environments

- ▶ `\begin{math} .. \end{math}`
- ▶ `\(.. \)`
- ▶ `$.. $`
- ▶ `\begin{displaymath} .. \end{displaymath}`
- ▶ `\[.. \]`
- ▶ `\begin{equation} .. \end{equation}`
- ▶ ...



Topics

- ▶ numbering equations
`\label{..} \eqref{..} \tag{..}`
- ▶ operators
`\deg \lim \log \max \min \sin ..`
- ▶ subscripts and superscripts
`{expression}_{subscript}^{superscript}`

```
\[
2^{2^x} > 0 \quad \lim_{n \to \infty} \frac{1}{2^n} = 0
\quad \max\{x^2 - x \mid 2 \leq x \leq 9\}
\]
```

$$2^{2^x} > 0 \quad \lim_{n \rightarrow \infty} \frac{1}{2^n} = 0 \quad \max \{x^2 - x \mid 2 \leq x \leq 9\}$$



The quadratic equation

```
\begin{equation}
ax^2 + bx + c = 0
\end{equation}
where $a$, $b$ and $c$ are constants with $a \neq 0$ has two solutions:
\begin{equation}
x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}
\end{equation}
```

src

The quadratic equation

$$ax^2 + bx + c = 0 \quad (1)$$

where a , b and c are constants with $a \neq 0$ has two solutions:

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \quad (2)$$



Topics

- ▶ roots
`\sqrt[order]{value}`
- ▶ fractions
`\frac{numerator}{denominator}`

```
\sqrt[32]{x} = \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{x}}}}}
\quad \frac{\frac{\sqrt{x+1}}{2} - x}{y^2}
```

src

$$\sqrt[32]{x} = \sqrt{\sqrt{\sqrt{\sqrt{\sqrt{x}}}}} \quad \frac{\frac{\sqrt{x+1}}{2} - x}{y^2}$$



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- ▶ location
- ▶ call for papers
- ▶ deadlines
- ▶ program committee
- ▶ invited speakers
- ▶ **accepted papers**
- ▶ **rebuttal**
- ▶ **publication**
- ▶ **ranking**
- ▶ awards

Federated Logic Conference (FLoC) 2026

- ▶ 32nd International Conference on Principles and Practice of Constraint Programming CP
- ▶ **11th International Conference on Formal Structures for Computation and Deduction FSCD**
- ▶ 42nd International Conference on Logic Programming ICLP
- ▶ 23rd International Conference on Principles of Knowledge Representation and Reasoning KR
- ▶ **41st Annual Symposium on Logic in Computer Science LICS**
- ▶ **29th International Conference on Theory and Applications of Satisfiability Testing SAT**
- ▶ **38th International Conference on Computer Aided Verification CAV**
- ▶ 39th IEEE Computer Security Foundations Symposium CSF
- ▶ **13th International Joint Conference on Automated Reasoning IJCAR**
- ▶ 17th International Conference on Interactive Theorem Proving ITP

Submission Process

- ▶ online (ConfTool, **EasyChair**, HotCRP, ...)
- ▶ title and abstract before paper
- ▶ AoE, deadline extension
- ▶ single blind / double blind



Reviewing Process

- ▶ paper bidding by PC members
- ▶ **reviews by PC members and subreviewers**
- ▶ discussion among PC
- ▶ **rebuttal phase (author response)**
- ▶ more discussion among PC
- ▶ notification (accept, reject, conditional accept)

- ▶ How NOT to Review a Paper – The Tools and Techniques of the Adversarial Reviewer (Cormode, SIGMOD 2008)

ADDRESSING REVIEWER COMMENTS BAD REVIEWS ON YOUR PAPER? FOLLOW THESE GUIDELINES AND YOU MAY YET GET IT PAST THE EDITOR:

<p>Reviewer comment: "The method/device/paradigm the authors propose is clearly wrong."</p> <p>How NOT to respond: ✗ "Yes, we know. We thought we could still get a paper out of it. Sorry."</p> <p>Correct response: ✓ "The reviewer raises an interesting concern. However, as the focus of this work is exploratory and not performance-based, validation was not found to be of critical importance to the contribution of the paper."</p>	<p>Reviewer comment: "The authors fail to reference the work of Smith et al., who solved the same problem 20 years ago."</p> <p>How NOT to respond: ✗ "Huh. We didn't think anybody had read that. Actually, their solution is better than ours."</p> <p>Correct response: ✓ "The reviewer raises an interesting concern. However, our work is based on completely different first principles (we use different variable names), and has a much more attractive graphical user interface."</p>	<p>Reviewer comment: "This paper is poorly written and scientifically unsound. I do not recommend it for publication."</p> <p>How NOT to respond: ✗ "You #@% reviewer! I know who you are! I'm gonna get you when it's my turn to review!"</p> <p>Correct response: ✓ "The reviewer raises an interesting concern. However, we feel the reviewer did not fully comprehend the scope of the work, and misjudged the results based on incorrect assumptions."</p>
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JORGE CHAM © 2005

- ▶ Rebutting Rebuttals (Dershowitz and Verma, CACM 2023)
- ▶ Rebuttal How-To: Strategies, Tactics, and the Big Picture in Research (Yao, CACM 2024)



CORE Ranking

- ▶ A* = exceptional (flagship conferences)
- ▶ A = excellent
- ▶ B = good to very good
- ▶ C = sound and satisfactory
- ▶ national / regional / Australasian

- ▶ descriptions

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Topics

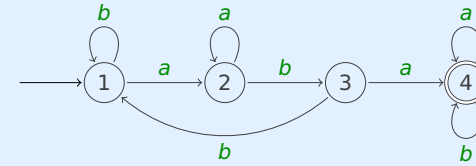
1 chemmacros	5 listings	9 pgf-go	13 TangramTikz	17 todonotes
2 chessboard	6 mathtools	10 pgfplots	14 tikzmark	
3 cleveref	7 microtype	11 postit	15 tikzpeople	
4 enumitem	8 MusiXTeX	12 qrcodetikz	16 tkz-berge	

Assignment

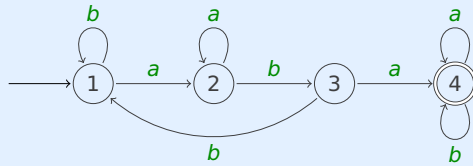
1 Bacher Martin	6 Oppermann Linda	13 Paganini Adriano
2 Weilbacher Jannick	8 Beier Tom Simon	14 Hölzl Sebastian
3 Darsel Esma	8 Küllmar Jan Peter	15 Krause Jakob Moritz
3 Fitz Julia	9 Albrecht Odin	16 Musch Eric Edgar Friedrich
4 Bekhtari Salma	10 Kerber Thomas Martin	17 Freiermuth Marie
4 Ristova Kirjana	11 Ilic Ilija	17 Leinfelder Matthias Christian
5 Krumholz Maya	11 Khakhlou Pavel	
5 Sagerer Marie	12 Ciech Dominique Manuel	

Outline

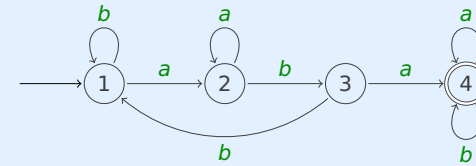
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```
\usetikzlibrary{automata,positioning}
\begin{tikzpicture}[auto,node distance=12mm]
\node [state,initial] (1) {1};
\node [state] (2) [right=of 1] {2};
\node [state] (3) [right=of 2] {3};
\node [state,accepting] (4) [right=of 3] {4};
\path[->,every node/.style={text=green!55!black,font=\sffamily\itshape}]
(1) edge [out=65,in=115,loop,above] node {b} (1)
edge
node {a} (2)
(2) edge [out=65,in=115,loop,above] node {a} (2)
edge
node {b} (3)
(3) edge [bend left=40] node {b} (1)
edge
node {a} (4)
(4) edge [out=65,in=115,loop,above] node {a} (4)
edge
node {b} (4)
\end{tikzpicture}
```



```
(2) edge [out=65,in=115,loop,above] node {a} (2)
edge
node {b} (3)
(3) edge
node {a} (4)
edge [bend left=40] node {b} (1)
(4) edge [out=65,in=115,loop,above] node {a} (4)
edge [out=-115,in=-65,loop,below] node {b} (4);
\end{tikzpicture}
```



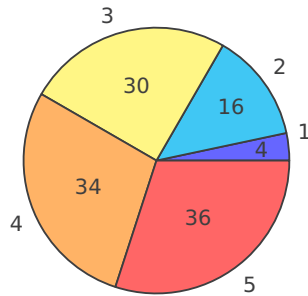
```
\tikzset{
shorten >=1pt, shorten <=1pt,
every initial by arrow/.style={initial distance=1cm},
initial text=,
accepting/.style={double distance=1pt},
every node/.style={font=\sffamily},
every state/.style={circle, draw, minimum size=4mm},
}
```

► quotes library to avoid explicit nodes along edges

Pie Charts

```
\usepackage{pgf-pie}  
\begin{tikzpicture}  
\pie[sum=auto]{4/1, 16/2, 30/3, 34/4, 36/5}  
\end{tikzpicture}
```

src

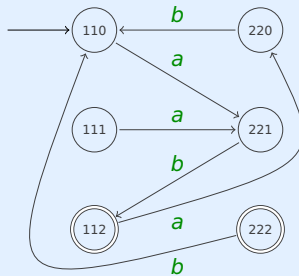


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Homework Exercises for April 16

- ① Read the "Advice on use of the CORE conference rankings." 1
- ② Determine the CORE ranking of the conferences that are part of FLoC 2026. 1
- ③ Use TikZ to typeset the following automaton: 2



- ④ Summarize the main points of the "Rebuttal How-To" paper. 1

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Announcement

Informationsveranstaltung: Missbräuchliche Verwendung von Künstlicher Intelligenz, Plagiate und andere Verletzungen der guten wissenschaftlichen Praxis

Missbräuchliche Verwendung von KI, Plagiate, Autor:innenschaftskonflikte, Datenmanipulationen und Datenfälschungen gehören zu den Verletzungen der guten wissenschaftlichen Praxis. Im Universitätsgesetz 2002 und im Hochschul-Qualitätssicherungsgesetz finden sich zahlreiche Bestimmungen zur guten wissenschaftlichen Praxis (wie zum Beispiel die Definition des Plagiatsbegriffs). In dieser Informationsveranstaltung, die sich gleichermaßen an Forschende, Lehrende, Betreuerinnen und Betreuer wissenschaftlicher Arbeiten sowie an Studierende wendet, werden die gesetzlichen Bestimmungen zur guten wissenschaftlichen Praxis sowie auch die Richtlinien der Universität Innsbruck zur Sicherung der guten wissenschaftlichen Praxis vorgestellt.

Vortragender: Dr. Robert Rebitsch, Büro für wissenschaftliche Integrität

Zeit/Ort: 13. April 2026, 13.00 – 14.30 Uhr, Hörsaal 5 $\frac{3}{4}$, Innrain 52

Anmeldung: keine Anmeldung nötig