



Workshop

Effizientes wissenschaftliches Publizieren: LaTeX und Overleaf in der Praxis

Mag.^a Dipl.-Ing.ⁱⁿ Lisa Kuka

L^AT_EX

Overleaf



Was ist L^AT_EX?

- pronounced "LAY-tek" or "LAH-tek"
- Eine Markup-Sprache für wissenschaftliches Schreiben
Textgenerierungsmodell
- eine einfache Textdatei, die mit LaTeX-Befehlen durchsetzt ist, um die gewünschten (gesetzten) Ergebnisse auszudrücken





Was ist L^AT_EX ?

- Unterstützung für extrem komplexer mathematischer, tabellarischer und technischer Inhalte in den Naturwissenschaften
 - Möglichkeiten für Fußnoten, Querverweise und die Verwaltung von Bibliographien
 - einfache Erstellung komplizierter oder langwieriger Dokumentenelemente wie Indizes, Glossare, Inhaltsverzeichnisse und Abbildungsverzeichnisse
 - hohe Anpassungsfähigkeit für die Erstellung maßgeschneiderter Dokumente aufgrund der Programmierbarkeit und Erweiterbarkeit durch Tausende von kostenlosen Zusatzpaketen
- 



Hello World Programm:

```
\documentclass{article}
\usepackage[utf8]{inputenc}
\usepackage{amsmath} % Example package
\title{My First Document}
\author{Your Name}
\date{\today}
\begin{document}
\maketitle
Hello, LaTeX!
\end{document}
```



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Commands fangen mit
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(Backslash) an

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Was ist Overleaf ?

- Eine **webbasierte** LaTeX-Plattform
 - **Gemeinsame** Bearbeitung und Kollaboration
 - Review-Vorschau nur im kostenpflichtigen Plan, aber auch für IEEE Mitglieder (dh der:die Autor:in muss erst akzeptieren, bevor die Veränderung übernommen wird)
 - **keine Installation** von LaTeX nötig oder zusätzliche Software
 - Vielzahl von **LaTeX-Vorlagen** und Beispielprojekten für wissenschaftliche Arbeiten, Poster, Präsentationen
 - Echtzeit-Vorschau
 - viele nützliche Tools und Funktionen, darunter automatische Referenzverwaltung, Veröffentlichung auf ArXiv und verschiedene Exportoptionen
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 - conclusio.tex
 - discussion-of-res...
 - introduction....**
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 - methodology.tex
- history.txt
- readme.txt
- svmult.cls

File outline

- Introduction

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learning, genetic algorithms, and reinforcement learning. The term \textit{artificial
intelligence} was coined six years later by John McCarthy at a conference in Dartmouth
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Resolve Reply

Teaching and Learning with AI in Higher Education: A Systematic Review

Lisa Kuka, Corinna Hörmann, Barbara Sabitzer

Abstract The impact of artificial intelligence in its many forms such as machine learning, data mining, learning analytics, etc. is undeniable. It is transforming not only social and economic life, but also education. Thus, the chapter examines the influence of AI on teaching and learning in higher education. For this study, a systematic literature review was conducted to form a narrative overview of artificial intelligence in higher education. The aim is to provide an assembly of key terminology such as machine learning, learning analytics, data mining, etc. as well as application in which these technologies are implemented such as for prediction, automation, etc. Considering this digital transformation, competences and skills necessary for students and educators alike are shifting, so that so-called 21st century skills are gaining importance.

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1



Hello World!

Mein erstes Stück LaTeX

```
1 \documentclass{article}
2 \begin{document}
3 First document. This is a simple example, with no
4 extra parameters or packages included.
5 \end{document}
```

Was schreibe ich?
article, report, book, letter, ...

```
1 \documentclass{article}
2 \begin{document}
3 First document. This is a simple example, with no
4 extra parameters or packages included.
5 \end{document}
```

**Hier beginnt und endet das
Dokument!**

Vorsicht! Was beginnt muss auch irgendwo enden!!

Ausgabe

Recompile



First document. This is a simple example, with no extra parameters or packages included.

Preamble

- alles was vor `\documentclass{article}` steht
- quasi ein Setup – die ganzen Dokumenteinstellungen

```
1 \documentclass[12pt, letterpaper]{article}
2 \usepackage{graphicx}
3
4 \begin{document}
5 First document. This is a simple example, with no
6 extra parameters or packages included.
7 \end{document}
```

Schriftgröße: 12pt

Papiergröße: letterpaper

```
1 \documentclass[12pt, letterpaper]{article}
2 \usepackage{graphicx}
```

zusätzliche Pakete

graphicx um Grafiken od. Bilder, etc.
einzubinden

• Man beachte:

- Art der [...] {...}
- Klammern, die aufgehen müssen wieder zugehen
- Parameter sind durch Komma getrennt

Bekannte Pakete

inputenc	Wahl der Zeichentabelle. Insbesondere bei Verwendung von Umlauten in der Eingabedatei erforderlich. Die Zeichentabelle wird als Option übergeben. Meist ist latin1 die richtige Einstellung, ggf. auch utf8 (Unicode).
fontenc	Kodierung der Schriftart. Sollte mit der Option T1 verwendet werden, damit Wörter mit Umlauten korrekt getrennt werden.
babel	Sprachanpassung für mehrere Sprachen mit Einfluss auf Trennregeln, Darstellung des Datums, usw. Die gewünschte Sprache wird als Option übergeben. Etwa german bzw. ngerman für alte bzw. neue deutsche Rechtschreibung.
graphicx	Einbindung von Grafiken.
amsmath	Erweiterte Funktionalität bei der Darstellung mathematischer Ausdrücke.
latexsym	Zusätzliche mathematische Symbole.
typearea	Bequeme Änderung des Seitenlayouts.

Aber!! keine Sorge: die meisten Konferenzen und Journals geben ein Template mit den passenden Einstellungen und Paketen vor

Title, Author and Date Information

- ebenfalls in der Preamble
- aber /maketitle im Dokument

```
1 \documentclass[12pt, letterpaper]{article}
2 \title{My first LaTeX document}
3 \author{Hubert Farnsworth\thanks{Funded by the Overleaf team.}}
4 \date{August 2022}
5
6 \begin{document}
7 \maketitle
8 We have now added a title, author and date to our first \LaTeX{} document!
9 \end{document}
```

My first LaTeX document

Hubert Farnsworth*

August 2022

We have now added a title, author and date to our first \LaTeX document!

*Funded by the Overleaf team.



Kommentar

- werden mit % eingefügt und werden nicht ausgegeben
 - Infos für einen selber oder andere
 - Sätze, die man doch nicht drin haben möchte
 - Strukturierung
- 



Struktur

- `(\chapter{ })`
 - `\section{ }`
 - `\subsection{ }`
 - Table of Content
 - `\tableofcontents`
- 

Bilder und Grafiken

```
1 \documentclass{article}
2 \usepackage{graphicx}
3 \graphicspath{{images/}}
4
5 \begin{document}
6
7 \begin{figure}[h]
8     \centering
9     \includegraphics[width=0.75\textwidth]{mesh}
10    \caption{A nice plot.}
11    \label{fig:mesh1}
12 \end{figure}
13
14 As you can see in figure \ref{fig:mesh1}, the function
    grows near the origin. This example is on page
    \pageref{fig:mesh1}.
15
16 \end{document}
```

Bilder und Grafiken

usepackage am Anfang

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Bilder und Grafiken

usepackage am Anfang

jeder Anfang hat ein Ende

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Bilder und Grafiken

usepackage am Anfang

hier wird die Grafik eingebunden

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Bilder und Grafiken

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Labels braucht man um im Text zu referenzieren

Bilder und Grafiken

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Labels braucht man um im Text zu referenzieren

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Aufzählungen und Nummerierungen

unordered list

```
1 \documentclass{article}
2 \begin{document}
3 \begin{itemize}
4   \item The individual entries are
      indicated with a black dot, a so-called
      bullet.
5   \item The text in the entries may be of
      any length.
6 \end{itemize}
7 \end{document}
```

- The individual entries are indicated with a black dot, a so-called bullet.
- The text in the entries may be of any length.

ordered list

```
1 \documentclass{article}
2 \begin{document}
3 \begin{enumerate}
4   \item This is the first entry in our list.
5   \item The list numbers increase with each entry we
      add.
6 \end{enumerate}
7 \end{document}
```

1. This is the first entry in our list.
2. The list numbers increase with each entry we add.

Aufzählungen und Nummerierungen

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- The individual entries are indicated with a black dot, a so-called bullet.
- The text in the entries may be of any length.

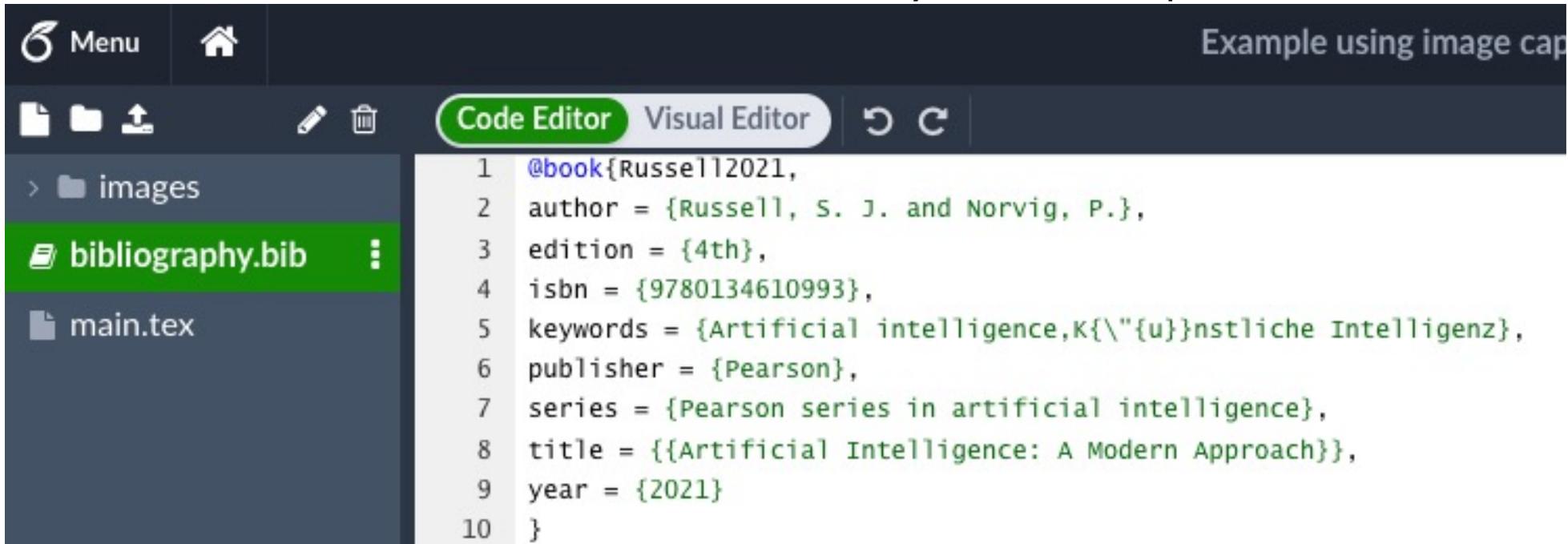
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jeder Anfang hat ein Ende

Zitieren mit BIBTEX

- eigene Datei bibliography.bib anlegen
 - hier werden alle Referenzen in Bib Style hineinkopiert



The screenshot shows a code editor interface with a dark theme. The top bar includes a 'Menu' icon, a home icon, and the text 'Example using image cap'. Below the top bar is a toolbar with icons for file operations and editing. The left sidebar shows a file explorer with a folder named 'images' and two files: 'bibliography.bib' (highlighted in green) and 'main.tex'. The main editor area displays the following BibTeX entry:

```
1 @book{Russell2021,  
2 author = {Russell, S. J. and Norvig, P.},  
3 edition = {4th},  
4 isbn = {9780134610993},  
5 keywords = {Artificial intelligence,K{"\u}nstliche Intelligenz},  
6 publisher = {Pearson},  
7 series = {Pearson series in artificial intelligence},  
8 title = {{Artificial Intelligence: A Modern Approach}},  
9 year = {2021}  
10 }
```

- im Text mit `\cite{Russell2021}` od.
`\cite[pp. 150--153]{Russell2021}`

Beispiel Google Schola

Google Scholar

ai in education

Artikel

Ungefähr 5 460 000 Ergebnisse (0,03 Sek.)

Beliebige Zeit

Seit 2023

Seit 2022

Seit 2019

Zeitraum wählen...

Nach Relevanz sortieren

Nach Datum sortieren

Beliebige Sprache

Seiten auf Deutsch

Alle Typen

Übersichtsarbeiten

[HTML] A Review of Artificial Intelligence (AI) in Education from 2010 to 2020

X Zhai, X Chu, CS Chai, MSY Jong, A Istenic... - Complexity, 2021 - hindawi.com

... of **AI** in **education**, were suggested for further investigation. However, we also proposed the challenges in **education** may be caused by **AI** with regard to inappropriate use of **AI** ...

☆ Speichern Zitieren Zitiert von: 159 Ähnliche Artikel Alle 13 Versionen Web of Science: 34

[HTML] hindawi.com

[BUCH] AI in Education

B Woolf - 1991 - cs.umass.edu

The field of **AI** in **Education** is concerned with development of **Artificial Intelligence** techniques for the study of human teaching and for the engineering of systems that facilitate human ...

☆ Speichern Zitieren Zitiert von: 121 Ähnliche Artikel

[PDF] umass.edu

Artificial intelligence in education: A review

L Chen, P Chen, Z Lin - Ieee Access, 2020 - ieeeexplore.ieee.org

... **Artificial Intelligence (AI)** on **education**. Premised on a narrative and framework for assessing

[PDF] ieee.org

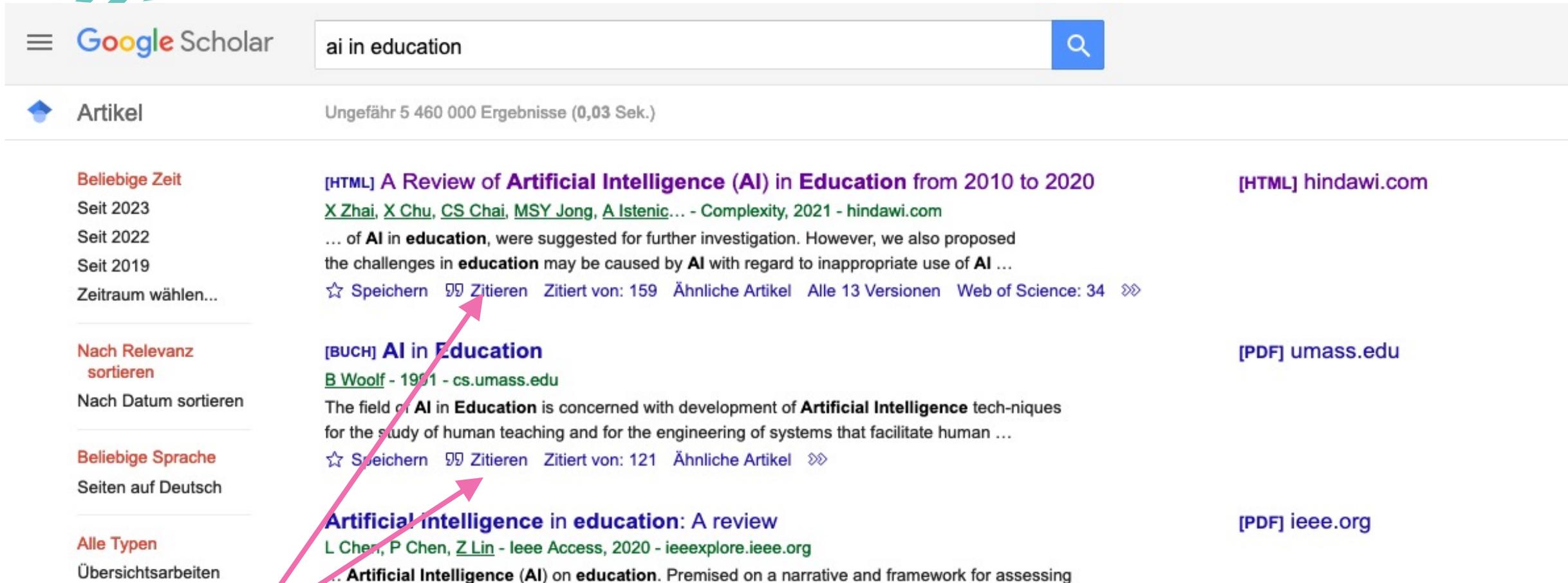
Zitieren

MLA Woolf, Beverly. *AI in Education*. University of Massachusetts at

```
@book{woolf1991ai,  
  title={AI in Education},  
  author={Woolf, Beverly},  
  year={1991},  
  publisher={University of Massachusetts at Amherst, Department of Computer  
  Science, Department of Computer and Information Science,  
  1991.
```

BibTeX EndNote RefMan RefWorks

Beispiel Google Scholar



The screenshot shows the Google Scholar interface. At the top, the search bar contains 'ai in education' and the search button is a blue magnifying glass. Below the search bar, the results are categorized under 'Artikel' with approximately 5,460,000 results found in 0.03 seconds. On the left side, there are filters for 'Beliebige Zeit' (with options for 'Seit 2023', 'Seit 2022', 'Seit 2019', and 'Zeitraum wählen...'), 'Nach Relevanz sortieren', 'Nach Datum sortieren', 'Beliebige Sprache', 'Seiten auf Deutsch', and 'Alle Typen' (with 'Übersichtsarbeiten' selected). The main results area displays three entries:

- [HTML] A Review of Artificial Intelligence (AI) in Education from 2010 to 2020** by X Zhai, X Chu, CS Chai, MSY Jong, A Istenic... - Complexity, 2021 - hindawi.com. The snippet mentions challenges in education caused by AI. It has 159 citations and is available as a PDF on hindawi.com.
- [BUCH] AI in Education** by B Woolf - 1991 - cs.umass.edu. The snippet discusses the development of AI techniques for teaching and engineering. It has 121 citations and is available as a PDF on umass.edu.
- Artificial intelligence in education: A review** by L Chen, P Chen, Z Lin - Ieee Access, 2020 - ieeeexplore.ieee.org. The snippet mentions a framework for assessing AI on education. It is available as a PDF on ieee.org.

Each entry includes options to 'Speichern' (save), 'Zitieren' (cite), and 'Ähnliche Artikel' (similar articles). Two red arrows point from the bottom left towards the 'Zitieren' links of the first two results.

Auf Zitieren klicken

Beispiel Google Scholar

× Zitieren

MLA Woolf, Beverly. *AI in Education*. University of Massachusetts at Amherst, Department of Computer and Information Science, 1991.

APA Woolf, B. (1991). *AI in Education*. University of Massachusetts at Amherst, Department of Computer and Information Science.

ISO 690 WOOLF, Beverly. *AI in Education*. University of Massachusetts at Amherst, Department of Computer and Information Science, 1991.

[BibTeX](#) [EndNote](#) [RefMan](#) [RefWorks](#)

BibTeX holen und in Overleaf einfügen

```
@book{woolf1991ai,  
  title={AI in Education},  
  author={Woolf, Beverly},  
  year={1991},  
  publisher={University of Massachusetts at Amherst, Department of Computer and~...}  
}
```

images

bibliography.bib

main.tex

```
1 @book{Russell2021,
2   author = {Russell, S. J. and Norvig, P.},
3   edition = {4th},
4   isbn = {9780134610993},
5   keywords = {Artificial intelligence,K{"{u}}nstliche Intelligenz},
6   publisher = {Pearson},
7   series = {Pearson series in artificial intelligence},
8   title = {{Artificial Intelligence: A Modern Approach}},
9   year = {2021}
10  }
11
12 @book{Coppin2004,
13   author = {Coppin, B.},
14   publisher = {Jones and Bartlett Publishers},
15   title = {{Artificial Intelligence Illuminated}},
16   year = {2004}
17  }
18
19 @article{Bozkurt2021,
20   author = {Bozkurt, A and Karadeniz, A and Baneres, D and Guerrero-Rold{"{a}}n, A E and Rodr{"{i}}guez, M E},
21   doi = {10.3390/su13020800},
22   issn = {20711050 (ISSN)},
23   journal = {Sustainability (Switzerland)},
24   keywords = {AI,AI in education,AIEd,Artificial intelligence,Deep learning,Education,Machine learning,algorithm,artificial
25     intelligence,education,ethics,learning,literature review,network analysis,social network},
26   language = {English},
27   number = {2},
28   pages = {1--16},
29   publisher = {MDPI AG},
30   title = {{Artificial intelligence and reflections from educational landscape: A review of AI studies in half a century}},
31   url = {https://www.scopus.com/inward/record.uri?eid=2-s2.0-85099871578&doi=10.3390%2Fsu13020800&partnerID=40&
32     md5=f90c303e21f48fale7a563ae45b8cb09},
33   volume = {13},
34   year = {2021}
35  }
```

Bibliographie/Referenzen einfügen

- in der Preamble des Dokuments
 - `\usepackage{natbib}` ODER `\usepackage{biblatex}`
- am Ende des Dokuments
 - `\bibliographystyle{stylename}` und
 - `\bibliography{dateiname}`
- Auswahl aus vielen Zitierstilen, zB
 - acm
 - apalike
 - ieetr

Name der Datei, die man für die Bibliographie angelegt hat
in diesem Fall `bibliography.bib`

```
69 \bibliographystyle{plain}
70 \bibliography{bibliography}
71 \end{document}
```

Weitere Zitierbefehle im Paket natbib

- Zitieren von Seitenzahlen
 - `\cite[p. 33]{Schluessel}`
 - Erlaubt es, eine bestimmte Seitenzahl für das Zitat anzugeben
- Textual Citation
 - `\citet{Schluessel}`
 - Erzeugt ein Zitat im Fließtext, z. B. Autor (Jahr)
- Parenthetisches Zitat
 - `\citep{Schluessel}`
 - Erzeugt ein zitierendes Element in Klammern, z. B. (Autor, Jahr)
- Zitat mit Angabe von Autoren
 - `\citeauthor{Schluessel}`
 - Gibt nur den Autorennamen aus, nicht das Jahr oder die Seitenzahl
- Jahreszahl-Zitat
 - `\citeyear{Schluessel}`
 - Gibt nur das Erscheinungsjahr aus

Beispiel

CSEDU 2024

16TH INTERNATIONAL CONFERENCE ON COMPUTER SUPPORTED EDUCATION

ANGERS, FRANCE / 2 - 4 MAY, 2024

Home Log In Co

Actions

- On-line Registration**
 - Registration Fees
 - Deadlines and Policies
- Submit Paper**
- Submit Abstract**
- Guidelines**
- Templates**
- Glossary**
- Author's Login**
- Reviewer's Login**
 - Ethics of Review

Information

- Conference Details**
 - Important Dates
 - Call for Papers
 - Program Committee
 - Event Chairs
 - Keynote Lectures
 - Best Paper Awards
- Satellite Events**
 - Workshops
 - Special Sessions
 - Tutorials

Templates

Guidelines **Templates** **Glossary**

Templates and Formatting

Using these templates is strongly advised to all authors submitting a paper for reviewing and mandatory version of their papers. Failure to produce correctly formatted camera-ready submissions may result in non-acceptance of Proceedings.

Conference Papers, including Special Sessions and Workshops

-  **MS Word Template**
-  **LaTeX Template**

Doctoral Consortium Papers

-  **MS Word Template**
-  **LaTeX Template**



Can you teach me Latex Basis



Of course! LaTeX is a powerful typesetting system commonly used for writing documents with complex structures, such as academic papers, theses, books, and more. Here's a basic introduction to LaTeX:



1. Document Structure:

- A basic LaTeX document starts with a preamble where you define the document class, packages, and settings. For instance:

```
latex Copy code
\documentclass{article}
\usepackage[utf8]{inputenc}
\usepackage{amsmath} % Example package
\title{My First Document}
\author{Your Name}
\date{\today}
\begin{document}
\maketitle
Hello, LaTeX!
\end{document}
```

2. Commands:

- Commands start with a backslash `\` and perform various functions. For example:
 - `\documentclass{}` defines the type of document.
 - `\usepackage{}` imports packages for additional functionalities.
 - `\title{}`, `\author{}`, and `\date{}` set the title, author, and date of the document.
 - `\maketitle` generates the title based on the information provided.
 - `{\today}` prints the current date.

Regenerate

3. Sections:

- Use commands like `\section{}`, `\subsection{}`, and `\subsubsection{}` to

Send a message



ChatGPT ist dein Freund





Literatur

- https://www.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes#What_is_LaTeX
- 



FRAGEN?

