

## **Scientific Knowledge and Reference Management with Zotero** *Concentrate on research and not re-searching*



# Agenda

- ❖ Motivation
- ❖ Idea behind Zotero
- ❖ Basic Usage
- ❖ Zotero's Features
- ❖ Comparison with other reference management tools
- ❖ Usage hints
- ❖ Installation & Configuration
- ❖ Additional Software Tools



# Motivation

Let's imagine the following situation:

You ...

- ▶ work as a **scientific researcher** (undergraduate, graduate student, PhD, ...)
- ▶ just start working on a new subject / research field
- ▶ **perhaps work in a team** and/or have colleagues / superiors knowing more than you (books, papers, websites, etc.)
- ▶ need to get a detailed **overview about the latest developments** in an area
- ▶ **Your target is to write a scientific report**  
(Diploma / PhD thesis, funding application, ...)
  - ▶ e.g. **summarizing and referencing** state-of-the-art work,
  - ▶ **analyze and learn** from existing approaches, etc.
  - ▶ **share knowledge** with others (e.g. local team, distributed community, ...)

# Knowledge and Reference Management

**Q:** How to efficiently search, evaluate, organize and share information to simplify your research tasks?

**A:** Use a state-of-the-art scientific reference management software like

# Zotero

(<http://www.zotero.org>)

The screenshot shows the Zotero application window titled 'SpringerLink - Buchkapitel - Mozilla Firefox'. The interface is divided into several panes:

- Left Pane (Sammlungen):** A tree view showing a library structure with folders like 'Meine Bibliothek', '0\_Informationssysteme...', 'GPU', 'Raytracing', 'Sensor\_Models', 'Simulation\_Environment', 'Automotive\_Architect...', 'Driver\_assistance&saf...', 'Middleware', 'physics\_simulation', 'Tracking', and 'Trash'. Below this are 'Group Libraries' and a list of tags such as '3D automated highways', 'automotive radar', 'camera parameters manipulation', etc.
- Center Pane (Titel):** A list of search results. The selected entry is 'ARTIS: A Parallel and Distributed Simulation Middleware f...' by Bononi et al.
- Right Pane (Infos):** A detailed view of the selected entry, showing metadata such as 'Autor: Bononi, Luciano', 'Buchtitel: Computer and Information Sciences - ISICIS 2004', 'Datum: 2004', 'Seiten: 627-637', 'Sprache: English', 'ISBN: ARTIS', and 'URL: http://www.springerlink.com...'.



## Zotero's Basic Idea

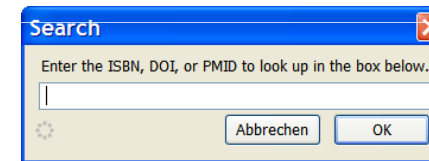
- ❖ Get reference information (BibTeX) directly from websites
  - ❖ Gets / creates reference data with a single click
  - ❖ Almost all popular websites work (IEEE, Google Scholar, Science, Amazon, etc.)
  
- ❖ The Browser is used as reference manager
  
- ❖ Runs on all platforms Firefox is running
  
- ❖ Uses open formats, open citation styles
  
- ❖ Supports many import and export formats

## Zotero's Basic Usage

- A) Go to a reference website, e.g. [www.ub.tum.de](http://www.ub.tum.de), Google Scholar, IEEE Xplore, Amazon, etc.



- B) Enter directly a ISBN or DOI code in Zotero



### Then, with a single mouse click ...

- 1.Click: import BibTeX data automatically into Zotero
- 2.Click: annotate, tag, download and index related PDF, etc.
- 3.Click: assign reference to (multiple) collections
- 4.Click: go deeper by looking at citing documents or use new search term

...

### x.Click:

- ▶ update "Group Collections"
- ▶ create report about annotations
- ▶ export reference data into BibTeX file -> use in LaTeX
- ▶ OR use Zotero data directly with MS Word or OpenOffice plugin





# Demo

SpringerLink - Buchkapitel - Mozilla Firefox

Suche:

Titel	Ersteller	
Multisensorielle Datensimulation im Fahrzeugumfeld für di...	Mesow	5
24. VDI-VW-Gemeinschaftstagung Integrierte Sicherheit u...	Gemeinschaftstagung I...	4
Common Sensor Models		3
Zotero		3
FERMAT, a new radar simulation approach or virtual reali...		3
Echtzeit Ray Tracing und Interaktive Globale Beleuchtungss...	Wald	3
Extraction of Virtual Scattering Centers of Vehicles by Ray...	Schuler et al.	3
Real-time simulation of time-of-flight sensors	Keller und Kolb	3
Distributed Simulation and Middleware for Networked UAS	Göktoğan und Sukkarieh	3
<b>ARTIS: A Parallel and Distributed Simulation Middleware f...</b>	<b>Bononi et al.</b>	<b>3</b>
Papers : mekentosj.com : Software for Research		2
EndNote - Bibliographies Made Easy		2
Holliday Junction: Paperverwaltung mit Mendeley		2
Microsoft Robotics Developer Studio		2
EasyKit: Mechatronische Systeme: Publikationen zum Thema		2
Interactive real-time motion blur	Wloka und Zeleznik	2
The OpenRT-API	Wald	2
Erprobung von Fahrerassistenzsystemen mit dem Interacti...	Simulator	2
Sensor and data fusion design and evaluation with a virtua...	Redmill et al.	2
ProFusion publications	Pernille Larsen	2
A component-based configuration and management frame...	Lopes et al.	2
An efficient multitarget tracking algorithm for car applicati...	Lee und Kim	2
A Simulation Framework for Time-Of-Flight Sensors	Keller et al.	2
Comparison of SAR simulation concepts for the analysis of...	Horst Hammer, FGAN...	2
Airborne Vision Sensor Detection Performance Simulation	GÖKTOĞAN et al.	2
Automotive radar target list simulation based on reflection ...	Bühren und Yang	2
Extension of Automotive Radar Target List Simulation to co...	Bühren und Bin Yang	2
Simulation of Automotive Radar Target Lists Considering C...	Bühren und Yang	2
Design and Testing of a Java-based Digital SAR Signal Sim...	Allan und Collins	2
Comparison of reference management software - Wikipedi...		1
heise online - 27.07.09 - SoftwareArchitektOUR-Podcast: ...		1
Salsa Y Corazon - Die Tanzschule mit Herz in München		1
Common Virtual Components		1
Dependency Walker (depends.exe) Home Page		1
IKA RWTH: Vorträge / Artikel: Fahrerassistenz		1
SISO		1
Der Einsatz von Fahrsimulatoren bei der Entwicklung von F...	Tiltmann und Friedrichs	1
On-road vehicle detection using optical sensors: a review	Sun et al.	1
Lidar-Sensoren zur Umfelderkennung bei Strassenfahrzeu...	Streller und Dietmayer	1
Radar signal simulation G.E. Pallon and J.F. Walker.	Mitchell	1
Time-of-Flight Sensors in Computer Graphics	Kolb et al.	1
Simply - everywhere online.	http://www. iq-optimi...	1
Fioon - everywhere online.	http://www. iq-optimi...	1

Infos Notizen Anhänge Tags Zugehörig

Schnappschuss anzeigen Finden

Buchteil

**Titel:** ARTIS: A Parallel and Distributed Simulation Middleware for Performance Evaluation

**Author:** Bononi , Luciano

**Author:** Bracuto , Michele

**Author:** D'Angelo , Gabri...

**Author:** Donatiello , Lore...

**(...) Zusammenfassung:** This paper illustrates the mo...

**Buchtitel:** Computer and Information Sciences - ISCIS 2004

**Reihe:**

**Reihe Nummer:**

**Band:**

**# von Bänden:**

**Auflage:**

**Erscheinungsort:**

**Verlag:**

**Datum:** 2004

**Seiten:** 627-637

**Sprache:**

**ISBN:**

**Kurztitel:** ARTIS

**URL:** http://www.springerlink.com...

**Heruntergeladen am:** Donnerstag, 16. Juli 2009 17:41:33

**Signatur:**

**Standort im Archiv:**

**Aufbewahrungsort:** SpringerLink

**Rechte:**

**Extra:**

**Hinzugefügt am:** Donnerstag, 16. Juli 2009 17:41:33

**Geändert am:** Donnerstag, 16. Juli 2009 17:41:33

Fertig zotero



## Zotero's Features\* - Search, Evaluate and Organize

- Automatically import BibTeX data from various sources e.g. scientific websites, ISBN, DOI, etc.
- Attach all kind of files: PDFs, snapshots of web pages, images, etc.
- Full-text indexing and meta data analysis of PDFs
- Organize references with collections and tags
- Annotate items with text and images
- Advanced search and data mining tools
- Large variety of import/export options, supports for many bibliographic styles (BibTeX, EndNote, RIS, RDF, MODS, etc.)

\*Current Zotero version 2.0x Beta





## Zotero's Features - Installation and Usage

- Available as Firefox 3.0 Plugin for many operating systems
- 1 Click installation
- Zotero is open source software and extensible
- Available > 30 languages
- Plugins for MS Word and OpenOffice (Citation + Bibliography creation)



## Zotero's Features - Collaboration

- Sync your ref library with multiple computers (via Zotero website + WebDAV server)
- Support for Group Libraries (is under active development)
  - **Current possible use case:** share useful refs with others rather than having a common repository
- Support for private (= invited members only, content not visible on Zotero website) and open groups
- Share references, documents, annotations and tags within a group (up to now missing: duplication detection, item synchronization over multiple libraries)



## Reference Manager Software Comparison

Name	Import / Export Functions	Multiple OS	Collaboration Functions	Open Source	Remarks
EndNote	+++	Win, Mac	-	N	not for Linux!
Jabref	+	Win, Mac, Linux	-	Y	almost no functionality for reference organization
Mendeley	+	Win, Mac, Linux	++	N	Improving fast, but not Open Source
Papers	+++	Mac only	-	N	Only for Mac and iPhone
Zotero	++	All OS supp. by Firefox 3.0	++	Y	Improving fast, overall the best compromise!

Further information see:

[http://en.wikipedia.org/wiki/Comparison\\_of\\_reference\\_management\\_software](http://en.wikipedia.org/wiki/Comparison_of_reference_management_software)



## Usage Hints

### Searching and Organization

- ▶ Collections and sub-collections
  - ▶ Structure knowledge logically in tree-form
  - ▶ Ref can be in multiple collections at the same time  
(Attention for drag&drop: by default, ref are copied, not moved!)
  - ▶ Deleting a ref from collection doesn't delete ref
  
- ▶ Use Tags to
  - ▶ assign additional search keywords to refs, notes, attachments
  - ▶ Evaluate / rate refs (use personalized Tags in groups!)
  
- ▶ Use "Saved Searches" as dynamic collections



# Usage of Group Libraries

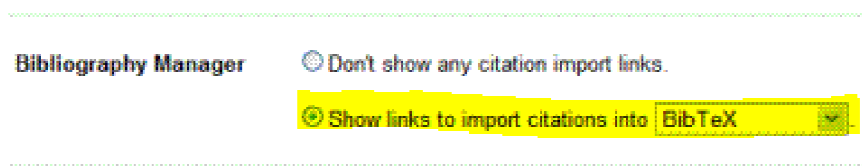
- ▶ Requires user account registration at [zotero.org](http://zotero.org)
  - ▶ Pay attention to the account's privacy settings
  - ▶ Create your own group library or become member of an existing
  - ▶ Limited Internet storage space for document sharing (free: 100 MB)
  
- ▶ Tags can be used for rating
  - ▶ Proposal to use personal tags for rating within a team,  
e.g. "rothe\_\*\*\*" or "rothe\_\*\*\*\*\*" (you can filter based on these tags)
  
- ▶ Important: consistent language usage for collection names, annotations and tags
  
- ▶ Current drawbacks, NO support for ...
  - ▶ synchronization of group collections with items in "My Library"
  - ▶ "saved searches" in group libraries





## General Usage Hints

- ▶ Google Scholar: save setting to show BibTeX link per search result ([http://scholar.google.de/scholar\\_preferences](http://scholar.google.de/scholar_preferences))



- ▶ Keep language of tags, notes and collection names consistent, e.g. all in English
- ▶ Search queries don't work on multiple libraries at the same time!  
-> Pay attention to the currently highlighted collection name

## Installation for Win, MacOS, Linux

1. Download + Install Firefox: <http://www.mozilla.com>

2. Start Firefox

3. Download + Install **Zotero 2.x**: <http://www.zotero.org>

4. Restart Firefox, start using Zotero  
(click on bottom right of Firefox window or Strg+Alt+Z)



5. Configure Zotero (Preferences... Menu), activate PDF indexing, ...

6. Optional: Download Word / OpenOffice Plugin:

[http://www.zotero.org/support/word\\_processor\\_plugin\\_installation](http://www.zotero.org/support/word_processor_plugin_installation)

# Zotero Configuration

- ▶ OpenURL Resolver Configuration for TUM: [http://sfx.bib-bvb.de/sfx\\_tum](http://sfx.bib-bvb.de/sfx_tum)
  - ▶ Directly order a book from the local library
  - ▶ Access electronic media (via TUM proxy)

The screenshot shows the 'Miscellaneous' and 'OpenURL' sections of the Zotero configuration dialog. In the 'Miscellaneous' section, several options are checked, with 'Automatically attach associated PDFs and other files when saving items' highlighted in yellow. In the 'OpenURL' section, the 'Resolver' field is set to 'http://sfx.bib-bvb.de/sfx\_tum', also highlighted in yellow. The 'Version' is set to '1.0'. Buttons for 'Update now', 'OK', and 'Cancel' are visible.

Miscellaneous

- Automatically check for updated translators Update now
- Report broken site translators
- Allow zotero.org to customize content based on current Zotero version
- Use Zotero for downloaded RIS/Refer files
- Automatically take snapshots when creating items from web pages
- Automatically attach associated PDFs and other files when saving items
- Automatically tag items with keywords and subject headings

OpenURL

Search for resolvers

Custom...

Resolver: [http://sfx.bib-bvb.de/sfx\\_tum](http://sfx.bib-bvb.de/sfx_tum)

Version: 1.0

OK Cancel



## Nothing is perfect...Zotero is under active development

- No global search feature: private and group collections need to be searched individually
- No checking for duplicates (feature should be available soon)
- Currently Zotero Server source code is not available
  - ▶ No own Zotero server, e.g. for chair or whole TUM can be created, due to potential privacy issues
- No integration of Firefox's search field with Zotero database



## Further useful Software Tools

### Annotate PDFs

- Windows: PDF-XCHANGE VIEWER  
<http://www.docu-track.com/downloads/users/>
- Linux: Xjournal
- Useful Zotero Plugins: <http://www.zotero.org/support/plugins>

General: searching/indexing of PDF text annotations is currently not possible within Zotero.





**Thank you very much  
for your attention!**

Find more information here:  
<http://www.zotero.org>