

Library services & Search and find scientific publications

Mikael Rosell

[Liu.se/en/Library](https://liu.se/en/Library)

Liunet student > Use library Resources

biblioteket@liu.se

Agenda

- Introduction to library services
- Scientific and scholarly publications
- Searching and finding scientific publications
- Evaluate your search results
- AI generated tools

Linköpings University

One university - four campuses

Campus Valla



Campus Norrköping



Campus US



Campus Lidingö

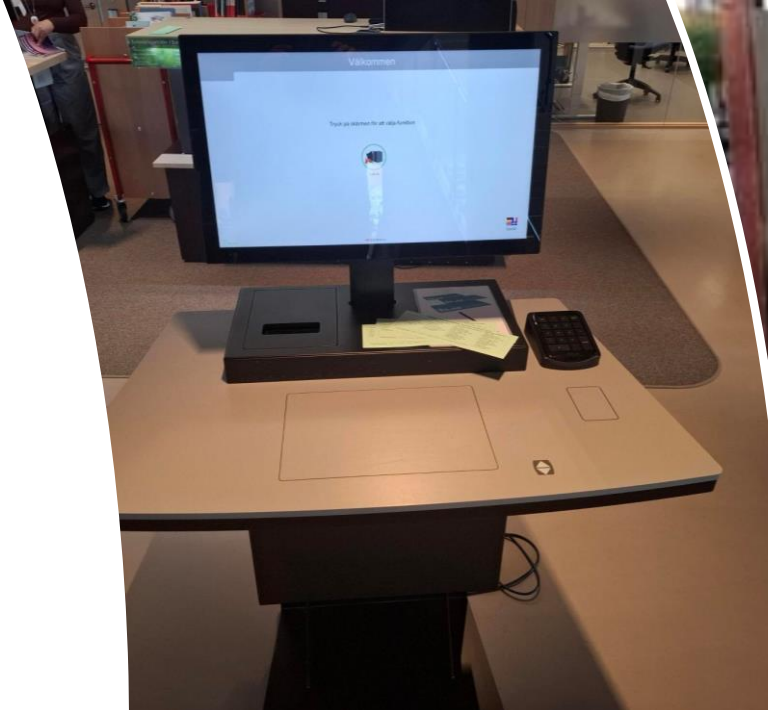


Your LiU-card is your library card
& key card (PIN)



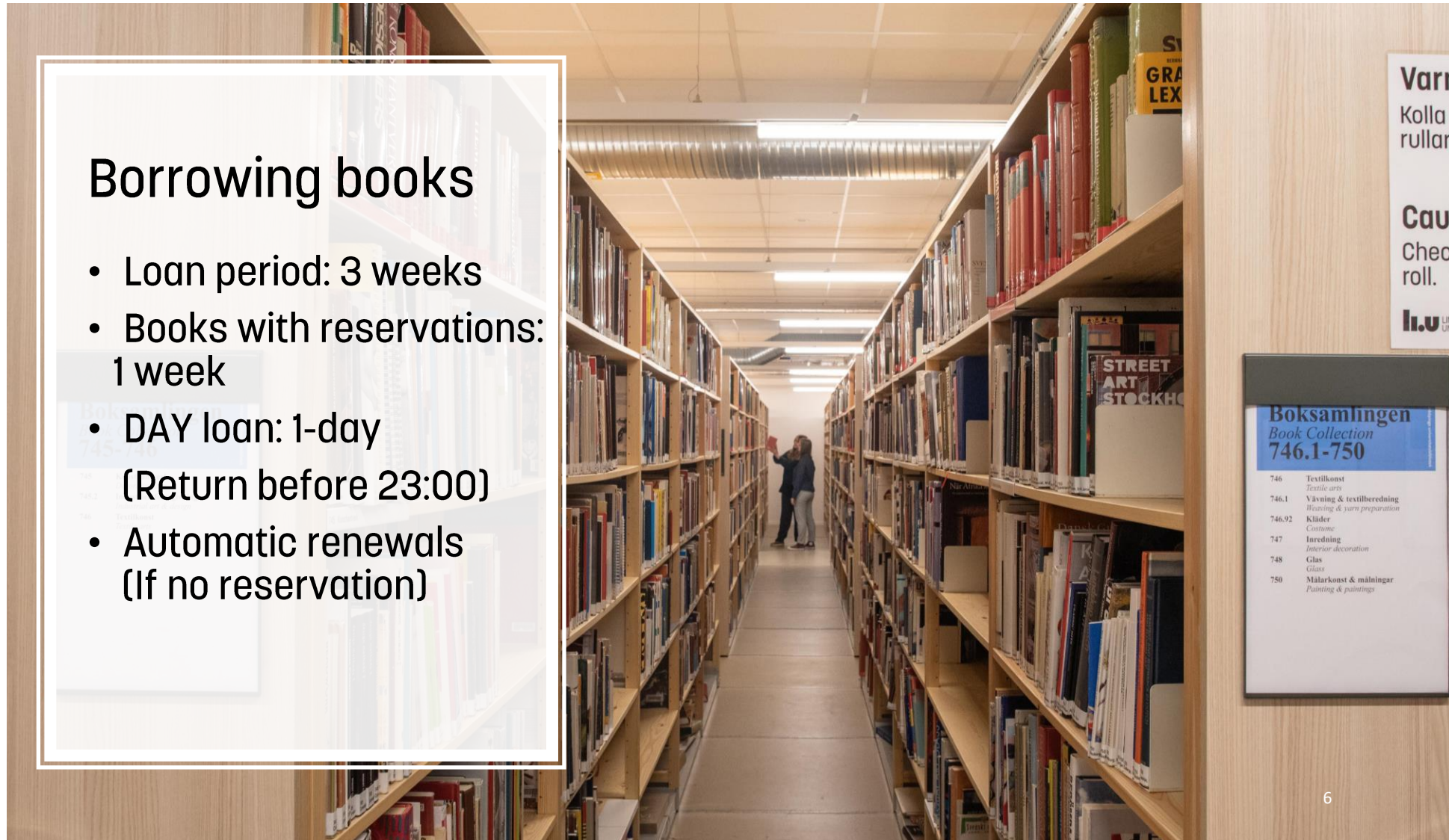
Studenthuset

- Library desk, floor 1 & 3
- Course literature, floor 1
- Day loan & Reserved book, floor 3
- Fiction books, floor 3-6
- Borrow books, floor 1 & 3
- Return books, floor 3, Outside



Borrowing books

- Loan period: 3 weeks
- Books with reservations: 1 week
- DAY loan: 1-day
(Return before 23:00)
- Automatic renewals
(If no reservation)



Valla library's opening hours

up-to-date opening hours on our website

Floor 1

Mon-Fri: 12-14

Floor 3

Mon, Wed & Fri: 10-16

Tue & Thu: 10-18

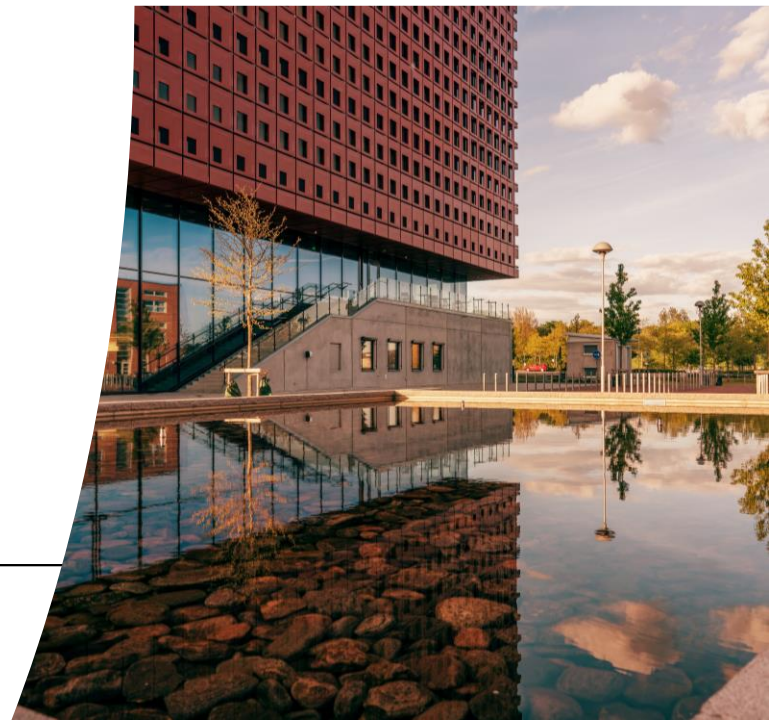
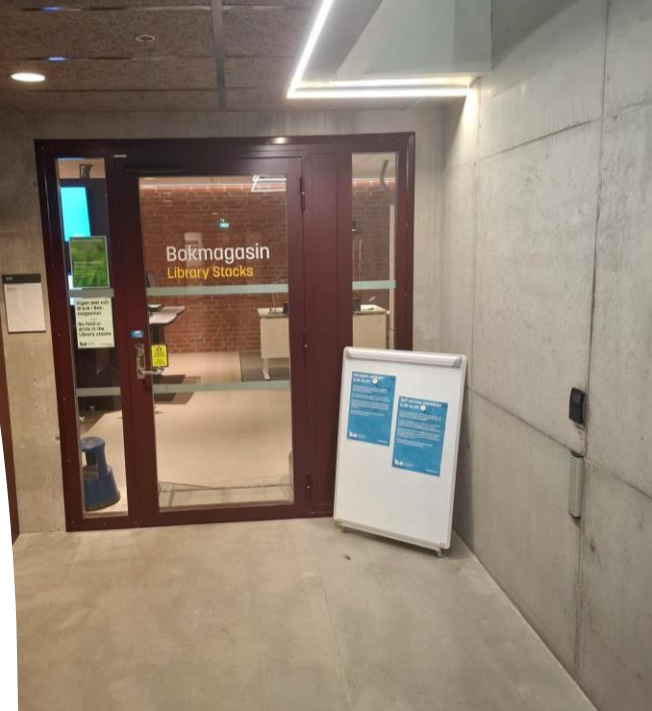
Sat: 11-14



Self-service opening hours (LiU card & PIN)

Studenthuset
Mon-Sun: 5-23

Floor 1
Mon-Fri: 8-18

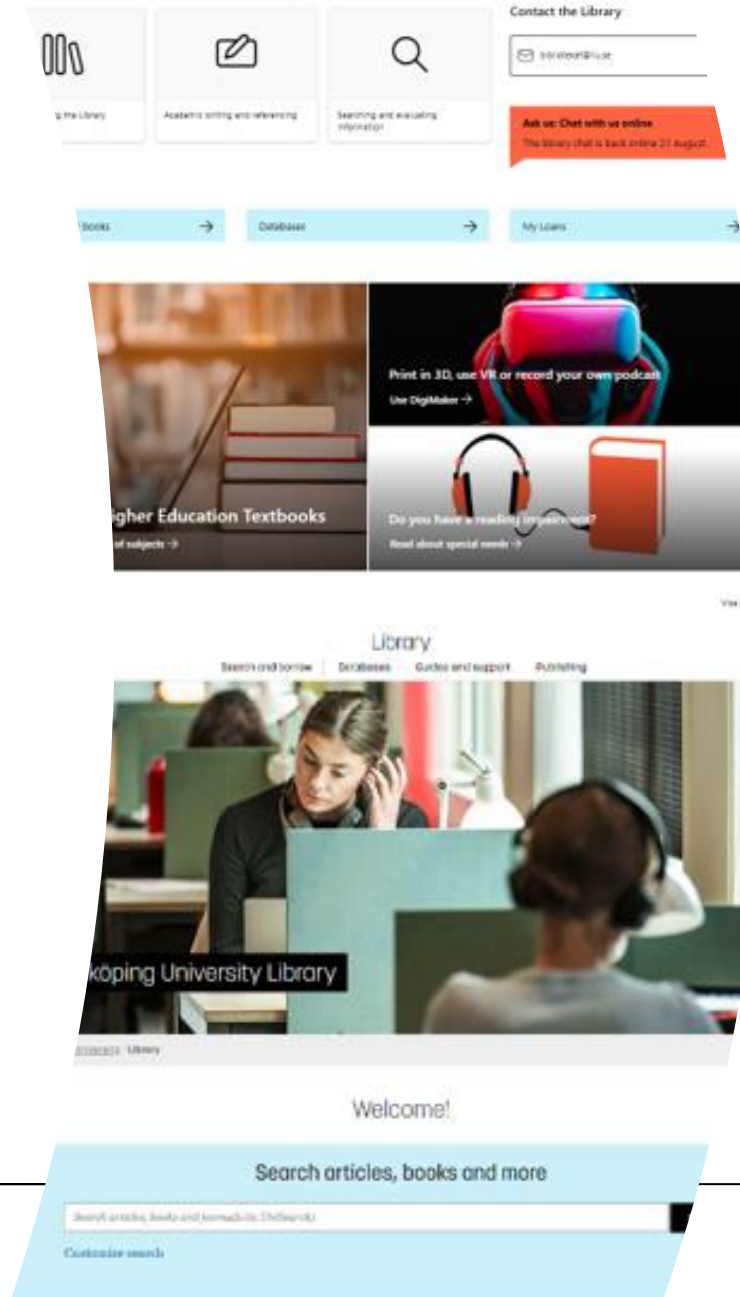


The digital library

LiU.se/en/Library

Liunet student > Use library Resources

- Unisearch The library's search engine
- Access 24/7 to digital materials (e.g. articles & books) with LiU-ID & password, on- and off-campus



Scientific and scholarly publications

- A scientific source is published by and for researchers
- The author and publisher is clearly visible
- Objective and formal style and language
- A predefined structure:
 - Quality Abstract, Introduction, Method, Results and Discussion
 - A reference list
- control, e.g., the peer review process

SPRINGER NATURE Link Log in

Find a journal Publish with us Track your research Search Cart

Home > Statistics and Computing > Article

Sparse and geometry-aware generalisation of the mutual information for joint discriminative clustering and feature selection

Original Paper | Published: 17 July 2024
Volume 34, article number 155, (2024) [Cite this article](#)

[Download PDF](#) Access provided by Linköpings universitet

[Statistics and Computing](#)

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[Sections](#) [Figures](#) [References](#)

[Abstract](#)
[Introduction](#)
[Related works](#)
[The sparse GEMINI](#)
[Optimisation](#)
[Experiments](#)
[Conclusion](#)
[Data availability](#)
[Notes](#)
[References](#)
[Acknowledgements](#)

Louis Ohl [✉](#), Pierre-Alexandre Mattei [✉](#), Charles Bouveyron, Mickaël Leclercq, Arnaud Droit & Frédéric Precioso

202 Accesses 1 Citation [Explore all metrics](#) →

Abstract

Feature selection in clustering is a hard task which involves simultaneously the discovery of relevant clusters as well as relevant variables with respect to these clusters. While feature selection algorithms are often model-based through optimised model selection or strong assumptions on the data distribution, we introduce a discriminative clustering model trying to maximise a geometry-aware generalisation of the mutual information called GEMINI with a simple ℓ_1 penalty: the Sparse GEMINI. This algorithm avoids the burden of combinatorial feature subset exploration and is easily scalable to high-dimensional data and large amounts of samples while only designing a discriminative clustering model. We demonstrate the performances of Sparse GEMINI on synthetic datasets and large-scale datasets. Our results show that Sparse GEMINI is a competitive algorithm and has the ability to select relevant subsets of variables with respect to the clustering without using relevance criteria or prior hypotheses.

Scholarly publications overview

	Article	Dissertation (Thesis)	Report	Conference article
Written by	Researcher	PhD student	Researcher	Researcher
Reviewed	By other researchers through peer review	By the supervisor, and later by the opponent and the examining committee	Sometimes by other researchers at seminars, but varying	Sometimes before the conference. Otherwise by other conference participants
Published	Academic journal	Usually by a university or an academic publisher	Research institutes or university departments	Sometimes in conference proceedings, but in many cases not published
Target audience	Researchers in the same research field	Primarily the opponent and the examining committee	Sometimes other researchers, sometimes a larger audience	Participants at the conference or researchers in the same research field
Be aware of	Predatory journals pretending to be serious	May be very specialized and not widely read outside academia.	Important to assess the level of scholarship	Not all conferences are scholarly or scientific

Scientific and scholarly publications

Ohl, L., Mattei, P.-A., Bouveyron, C., Leclercq, M., Droit, A., & Precioso, F. (2024). Sparse and geometry-aware generalisation of the mutual information for joint discriminative clustering and feature selection. *Statistics and Computing*, 34(5), 155. <https://doi.org/10.1007/s11222-024-10467-9>

- Author: Louis Ohl, Linköping University, Department of Computer and Information Science (IDA), Division of Statistics
- Publisher: Springer Nature Group international publisher of academic publications within the subjects technic och medicine.
- Source: Statistics and Computing

Scientific journal that publishes peer-reviewed articles about research at the intersection of statistics and computing

How to read scientific publications

1. Title and Author
2. Abstract
3. Discussion (Conclusion)
4. Introduction
5. Results
6. Method



Don't read from start to end!

Scientific articles

Original articles

- Also called research articles
- Presents new research
- Based on empirical studies
- Original source of information that present an objective knowledge base

Review articles

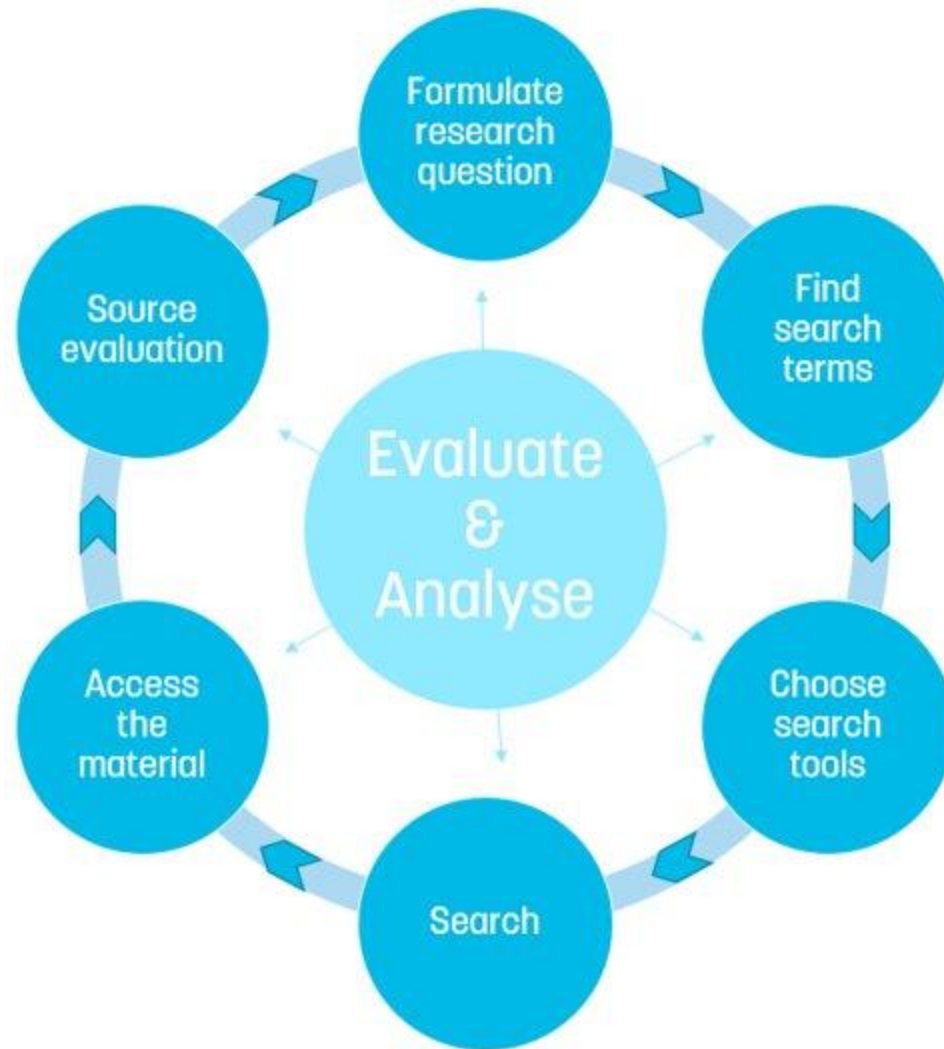
- Also called literature overview, systematic review & scooping
- Comprehensive summary of existing research – secondary source
- Does not present new, own original research results
- A good place to start to get an overview of an unfamiliar topic

Why Information search?

Procedure when to write an academic text!

- Searching and finding information
- Evaluate the quality of information sources
- Write and organize the text

Search process



Search terms and keywords

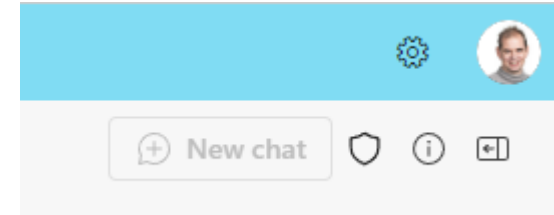
- Formulate a research question

How do self-driving buses affect passenger experiences regarding traffic safety, comfort and accessibility?

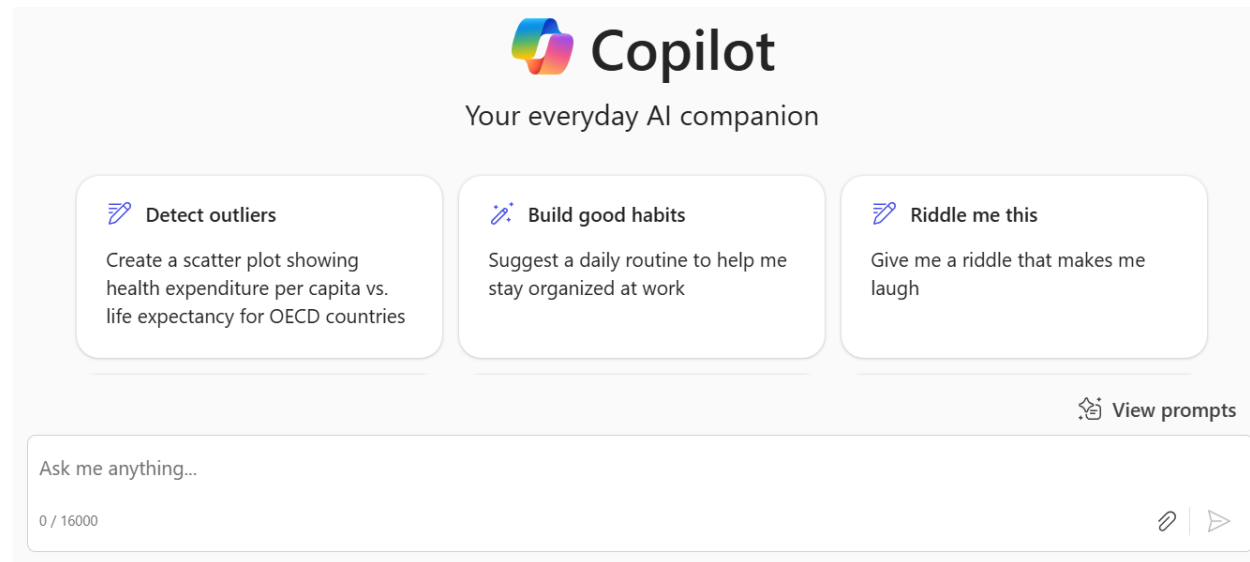
- Identify useful keywords within the question/questions
- You can use AI-tools to help you with synonyms

Microsoft Copilot – Your new AI-assistant?

- <https://copilot.cloud.microsoft>
- LiU License – data protection



Log in with your LiU account
Liuid123@student.liu.se



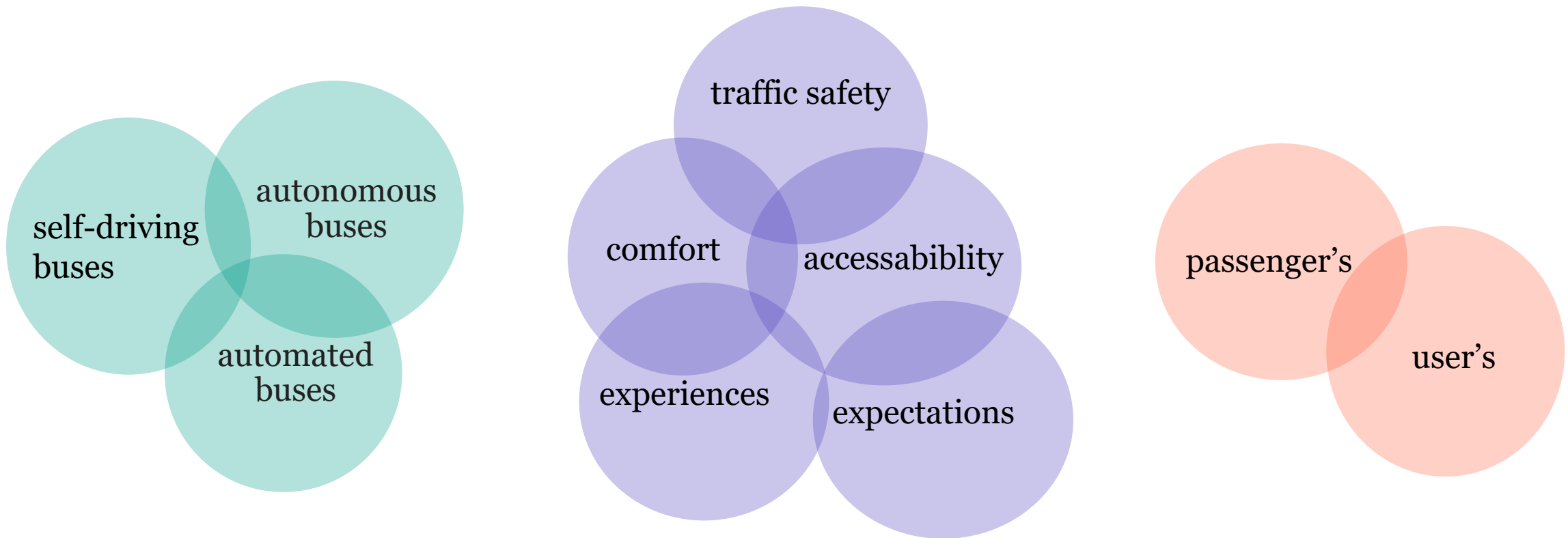
Copilot – to support your Information search

- Prompt engineering: Be clear and specific about your topic
- Find new keywords & create useful search strings
- Examples of sources (articles, books, websites, etc.)
- In combination with common search tools

I will write a report on bachelor level about the following topic. Can you help me create 3 relevant search queries including synonyms?

Topic: How do self-driving buses affect passenger experiences regarding traffic safety, comfort and accessibility

1. "Self-driving buses" OR "autonomous public transport" AND "passenger experience" AND ("traffic safety" OR "road safety")
→ Focuses on safety perceptions and experiences with autonomous buses.
2. "Autonomous buses" AND ("comfort" OR "ride quality") AND ("user experience" OR "passenger feedback")
→ Targets studies on comfort and subjective passenger evaluations.
3. "Self-driving public transport" AND ("accessibility" OR "inclusive design") AND ("passenger satisfaction" OR "user perception")
→ Emphasizes accessibility and how different user groups experience autonomous transport.



How do self-driving buses affect passenger experiences regarding traffic safety, comfort and accessibility?

Organize your search terms

- *First identify key words, then document and organize them.*
- *It is a good idea to organize search terms in search blocks.*

Self-driving buses	Experience	Passengers	Review
Automated buses Autonomous buses	Accessibility Expectations Traffic safety Comfort	Users	Survey Study Overview

Choose search tools

Background material:

- Encyclopedia
 - AccessScience, Britannica online
- Fact books
 - UniSearch: Books at LiU Library, Google Books
- Student thesis & researchers publications
 - DiVA

Scientific material:

- UniSearch
 - Search for scientific publications available via LiU
- Google Scholar
 - Google's search engine for scientific material
- Databases
 - Scientific journals and other publications

Choose a search tool according to your information need!

Unisearch - liu.se/en/library

Navigate and search...

- The library's books
- Scientific journals
- Encyclopedia
- Databases
- ...but not everything we have access to

Services

- Search
- See availability
- Access our licensed content
- Reserve books

Search articles, books and more

Search articles, books and journals (in UniSearch)

Search

[Customize search](#)

[Advanced search](#)

Google Scholar



Advantages

- Free and easy to use - no login required
- Broad coverage across disciplines
- Citation tracking - shows how often a work is cited
- Quick discovery - often links to full texts or publisher pages

Drawbacks

- Does not guarantee access - many sources require subscriptions
- Quality control varies - not all results are peer-reviewed
- Limited filtering options compared to academic databases
- Duplicate entries may appear

Databases

- Multidisciplinary
Scopus
SpringerLink
- Subject specific
IEEE Xplore
ACM

- Contains scientific publications
- Quality controlled
- Easy to refine searches
- Publications that are not available via e.g., Google Scholar

Search Query 's

Purpose: Build queries from your research question

Examples:

- **Basic:** Self-driving buses "User experience"
- **Boolean:** (autonomous OR self-driving) AND (buses OR vehicles) AND "user experience"
- **Advanced:** ("autonomous bus" OR "automated bus" OR "self-driving bus")
AND (passenger OR "passenger experience" OR "user experience")
AND ("traffic safety" OR comfort OR availab* OR access* OR convenien*)
- **Natural language:** What is the user experience of passengers traveling in autonomous buses?

Depends on Tool:

- **Unisearch:** Books at LiU → broad terms, book titles
- **Database** → precise, Boolean logic, filters

New

Scopus AI

What?

- Natural language search
- Copilot interprets & optimizes queries
- Suggests keywords & related terms

Why?

- Great for early-stage research
- Supports question formulation
- Saves time in literature review

Limitations

- Limited reference lists
- Covers research from 2003+
- No standardized output

Tips

- Use as a starting point
- Always verify sources
- Combine with manual search

Advanced search - Databases

- Search in fields
- Boolean operator (OR)
- Phrase search
- Filtering and sorting
- Search History
- Saved searches and alerts (account required)

The screenshot displays an advanced search interface with three criteria, each in a separate row. Each row consists of a 'Search within' dropdown menu and a 'Search documents' text input field. The first row has 'Article title, Abstract, Keywords' selected in the dropdown and the search text '"autonomous bus" OR "automated bus" OR "self-driving bus"'. The second row has 'Article title' selected and the search text 'passenger OR "passenger experience" OR "user experience"'. The third row has 'All fields' selected and the search text '"traffic safety" OR comfort OR availab* OR access* OR convenien*'. Between each row is an 'AND' operator with a dropdown arrow. At the bottom, there are links for '+ Add search field', 'Add date range', and 'Advanced document search >'. A blue 'Search' button with a magnifying glass icon is on the right.

Search within Article title, Abstract, Keywords	Search documents * "autonomous bus" OR "automated bus" OR "self-driving bus"
AND	
Search within Article title	Search documents passenger OR "passenger experience" OR "user experience"
AND	
Search within All fields	Search documents "traffic safety" OR comfort OR availab* OR access* OR convenien*

+ Add search field Add date range Advanced document search >

Search 🔍

Relevant sources gives new sources & keywords

Automated **bus** systems in Europe: A systematic review of passenger **experience** and road **user** interaction

DD Heikoop, JPN Velasco, R Boersma... - Advances in Transport ..., 2020 - Elsevier

... Especially when applied in the domain of **public transport**, economic and passenger ...

projects involving automated **buses** appear throughout the world, investigating how its **users** and ...

☆ Spara Citera Citerat av 37 Relaterade artiklar Alla 4 versionerna Importera till EndNote

- Authors/Journal/Publisher
- Concepts/Keywords/Subject headings
- Reference list
- Related sources
- Cited by
- Database (Emerald)

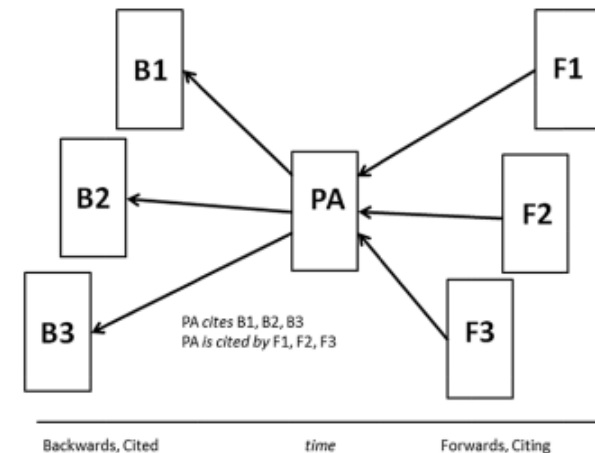


Fig. 1. Forward and backward citations cited and citing documents.

Save and organize relevant sources

Save references from search tools,
e.g. Google Scholar, Unisearch

[HTML] A systematic literature review of the factors affecting **smartphone** user threat avoidance behaviour
[R Butler](#) - Information & Computer Security, 2020 - emerald.com
... **security** that is prevalent among **smartphone** users and make cost effective and usable interventions available. Training and **awareness** ... in this study to affect **smartphone** users' threat ...
[☆ Save](#) [Cite](#) [Cited by 8](#) [Related articles](#) [All 3 versions](#) [Import into EndNote](#)

☐ 1



Peer reviewed | Academic journal

Understanding *users'* willingness to travel on *autonomous buses*: The mod effect of *experience*

By: Molinillo, Sebastian; Caballero-Galeote, Lidia; Liebana-Cabanillas, Francisco; +1 more • In: JOURNAL OF RETAILING SERVICES, NOV 2024 • Social Sciences Citation Index

Subjects: *Autonomous bus*; Artificial intelligence; Willingness to use; Attitude; +2 more

[Access options](#)

6 citations in Scopus®

[Cite](#)

[Add to project](#)

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zoterobib

10.1108/ICS-01-2020-0016/full/html

Cite

[1] R. Butler, "A systematic literature review of the factors affecting smartphone user threat avoidance behaviour," *ICS*, vol. 28, no. 4, pp. 555-574, Jun. 2020, doi: 10.1108/ICS-01-2020-0016. Available: <https://www.emerald.com/insight/content/doi/10.1108/ICS-01-2020-0016/full/html>. [Accessed: Feb. 28, 2024]

Access Material

- PDF-fulltext



LiU Full Text



 Find Full Text

Free Full Text (Open Access)

LiU Full Text  Linked full text



Other ways to fulltext?

- Search on article title in Unisearch/Google Scholar
- Google Scholar – LiU Full Text
- Search on journal name in UniSearch
- No Access? [Loans and requests](#) (Note! Language)

Sparse and geometry-aware generalisation of the mutual information for joint discriminative clustering and feature selection

[L Ohl](#), [PA Mattei](#), [C Bouveyron](#), [M Leclercq](#), [A Droit](#), [F Precioso](#)

[Statistics and Computing](#), 2024 • Springer

Search articles, books and more

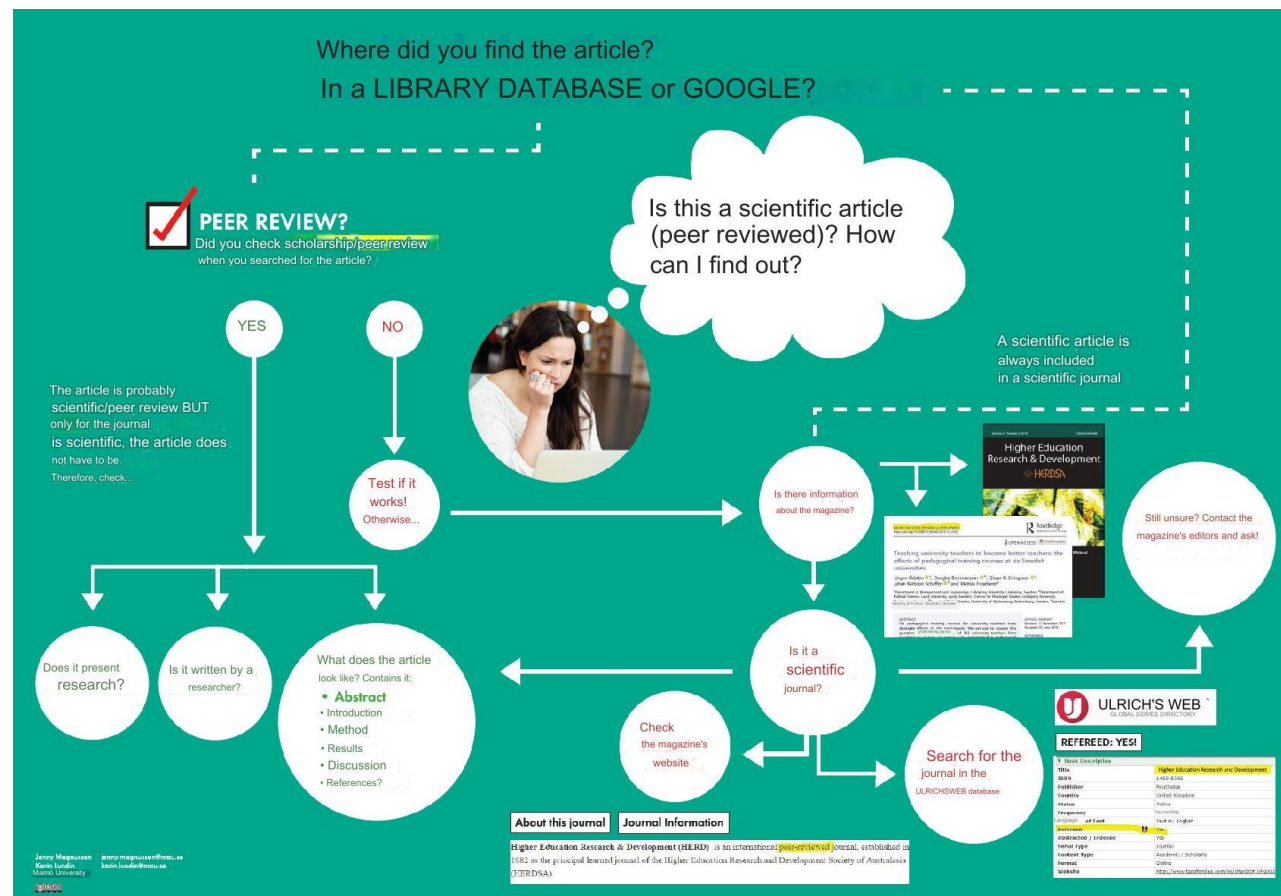
Statistics and Computing

Customize search

Search for...	Search by...
<input type="checkbox"/> Articles, books and journals	<input checked="" type="checkbox"/> Title
<input type="checkbox"/> Books in Swedish libraries	<input type="checkbox"/> ISSN
<input type="checkbox"/> Databases	
<input checked="" type="checkbox"/> Journals	
<input type="checkbox"/> Publications from LiU	

Evaluate your Search results

- Where is the source published?
- Peer-review?
- Author/Publisher/Journal?
- Presents research?
- IMRAD?
- Relevance?
- [LiU Journal Check Up](#)
- [Ulrichsweb : global serials directory](#)



Magnusson, J., & Lundin, K. (u.å.). *Vetenskapliga artiklar flödesschema*. Malmö universitet. <https://mau.app.box.com/s/x94l8v7mb6xzfpiq22mb37yvt61ljef>

AI-Tools: Remember this

“Ask a silly question, get a silly answer”

- Importance of prompt engineering

Factual accuracy and source criticism - Verify

- Bias and hallucinations
- Transparency – what tools did you use and how?

You yourself are involved in training the AI service you use

- Do not share sensitive information or data
- Do not share copyrighted material

Ethical dilemmas – your responsibility, AI is not an author

Linköping University library

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