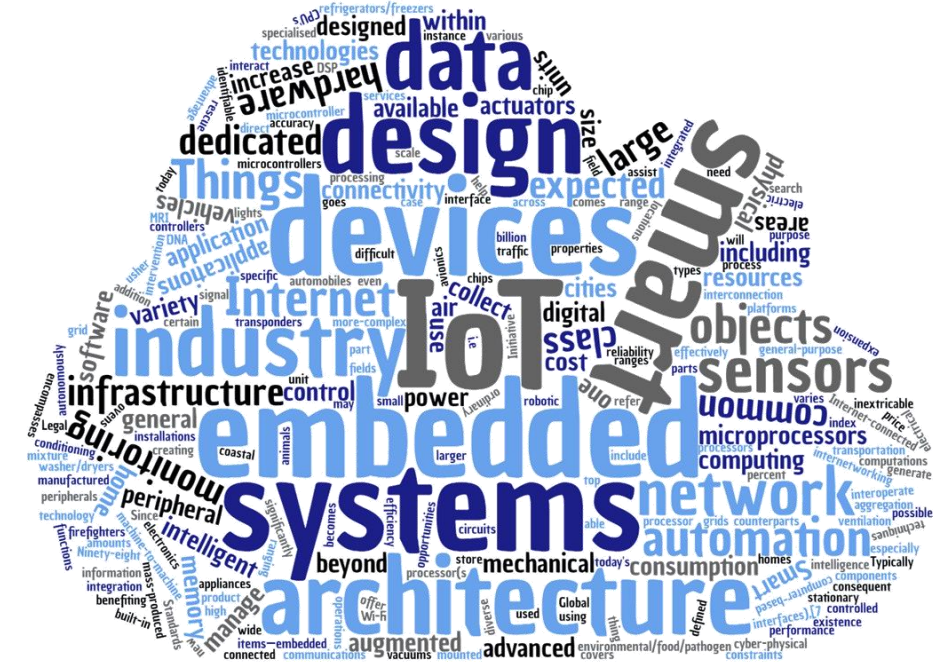


Advanced Seminar

Embedded Systems and Internet of Things

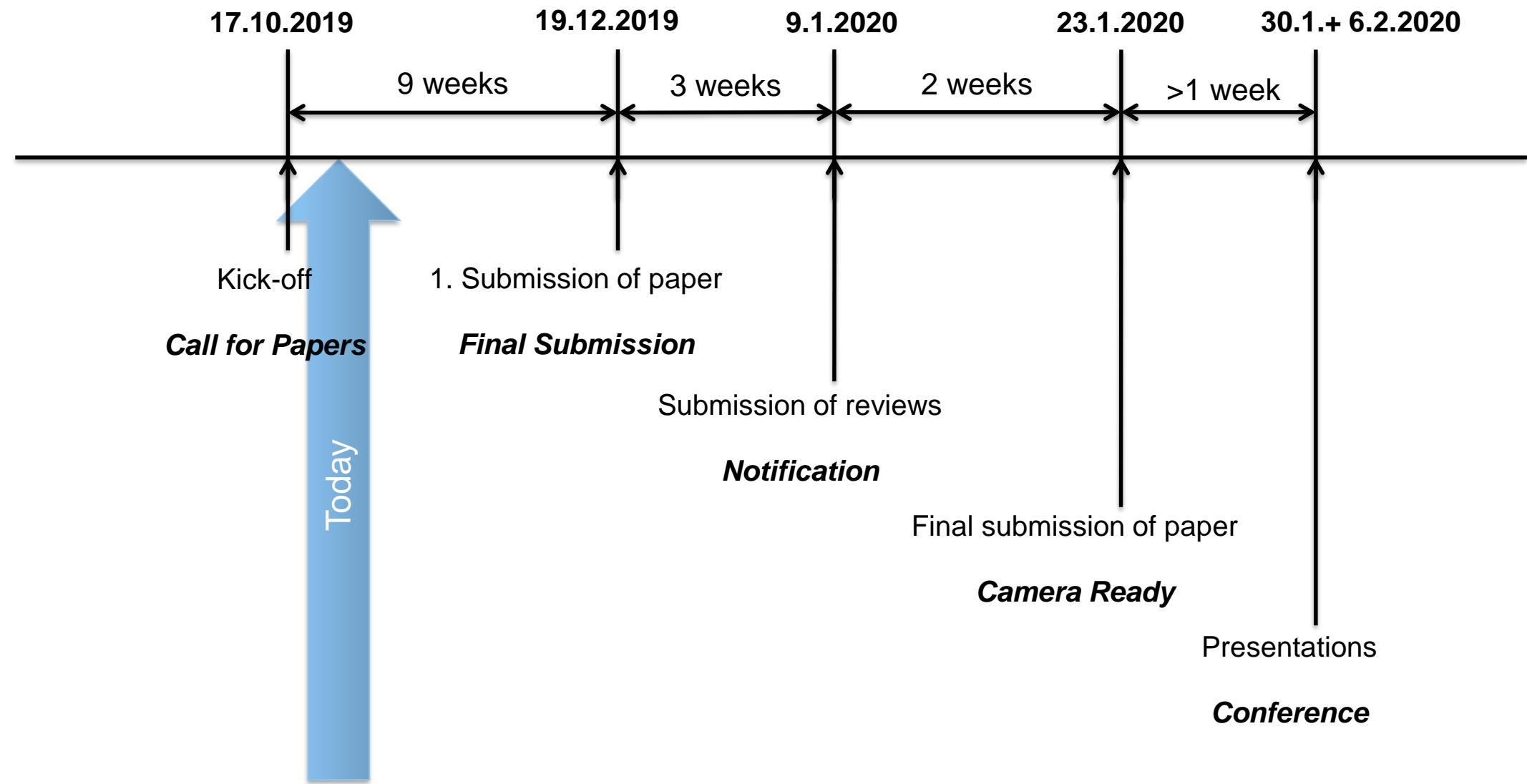
Literature Review



Semester Overview

- Kick-off meeting
- Introductions to
 - Literature review
 - English language for scientific writing
 - How to structure a good paper
 - How to write a good abstract
 - Layout of successful papers
 - How to present your work
- Meetings for discussion and feedback
- Discussion of paper peer-reviews
- Final presentation “Mini Conference”

Schedule



This Week


Identify the state of the art: how to find good references for your topic?

Preparation:

- Where would I search?
- How do I find a PDF of a paper?
- What would I search for?
- What makes a credible source?
- How would I judge if a source matches my topic?

Where do I search for literature?

Google Scholar

☒ Beliebige Sprache ☐ Seiten auf Deutsch

<https://scholar.google.com>

- De facto standard for literature research
- Indexes literature based on Google website crawling
- Links to PDF if available



<https://www.researchgate.net>

- Authors self-archive their publications
- Enables keyword search
- Full-texts available for many publications
- Full-text request can be sent to authors if PDF is not available
- Do some research on the author's website before filing a full-text request

Get in Contact +

Searching & Finding -

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E-Books

Standards

Theses

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Are you on the road or at home? eAccess is a convenient way to use electronic media the University Library at the TUM has under licence. These include electronic e-journals, e-books and databases. eAccess is web based and requires no plug-ins, client software or a special browser settings.


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[Directions](#)

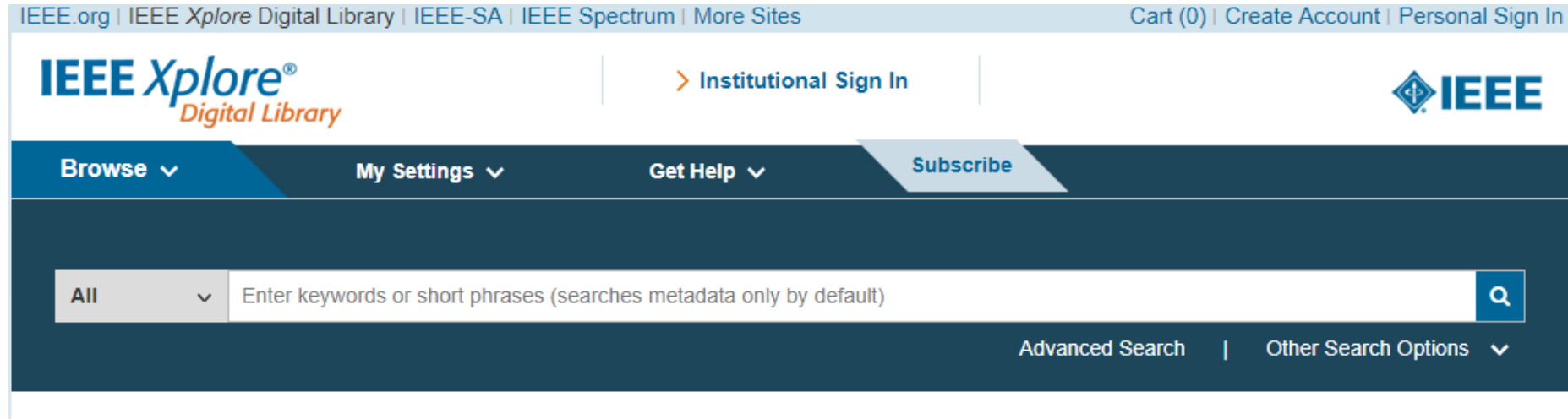
Contact

<https://www.ub.tum.de/eaccess>

<https://www.lrz.de/services/netzdienste/proxy/browser-config/>

- Works for sources for which TUM has the access rights

IEEEExplore



<http://ieeexplore.ieee.org>

- IEEE publishes many popular journals and conferences
- Papers in IEEE have gone through a minimum of quality checking
- Works with TUM eAccess Bookmarklet!

ACM Digital Library



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The **ACM Digital Library** is a research, discovery and networking platform containing:

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Advanced Search

Browse the ACM Publications:

- [Journals/Transactions](#)
- [Magazines](#)
- [Proceedings](#)
- [ACM Books](#)


Browse the Special Interest Groups:

- [Special Interest Groups \(SIGs\)](#)

Browse the Conferences:

- [Recent and Upcoming Conferences](#)
- [Conference Listing](#)

Browse the Special Collections:

- [eBooks](#) available to ACM Members 
- [ACM International Conference Proceeding Series \(ICPS\)](#)

- ACM publishes many popular journals and conferences
- Papers in ACM DL have gone through a minimum of quality checking
- Works with TUM eAccess Bookmarklet!

Hands-on Exercise

Find different ways to obtain the PDF for the following paper:

M. D. Pierro, "What Is the Blockchain?," in *Computing in Science & Engineering*, vol. 19, no. 5, pp. 92-95, 2017.

doi: 10.1109/MCSE.2017.3421554

What would I search for?

- Use specific keywords, but do not be over-specific to not exclude relevant work
- Find relevant keywords by reading initial papers / websites
- Find direct links to references in relevant papers and work backwards / sideways
- Think in keyword trees:
 - Example: Digitalization -> Internet of Things -> Communication -> MQTT
- Think of adjacent keywords to make your search broader and discover more relevant work

What makes a credible source?

<http://libguides.library.cityu.edu.hk/litreview/evaluating-sources>

To read for your literature review, it is not enough just to understand. **You are also expected to think, analyze and read with a critical mind.** Identify the arguments made by the author, and ask questions while you read.

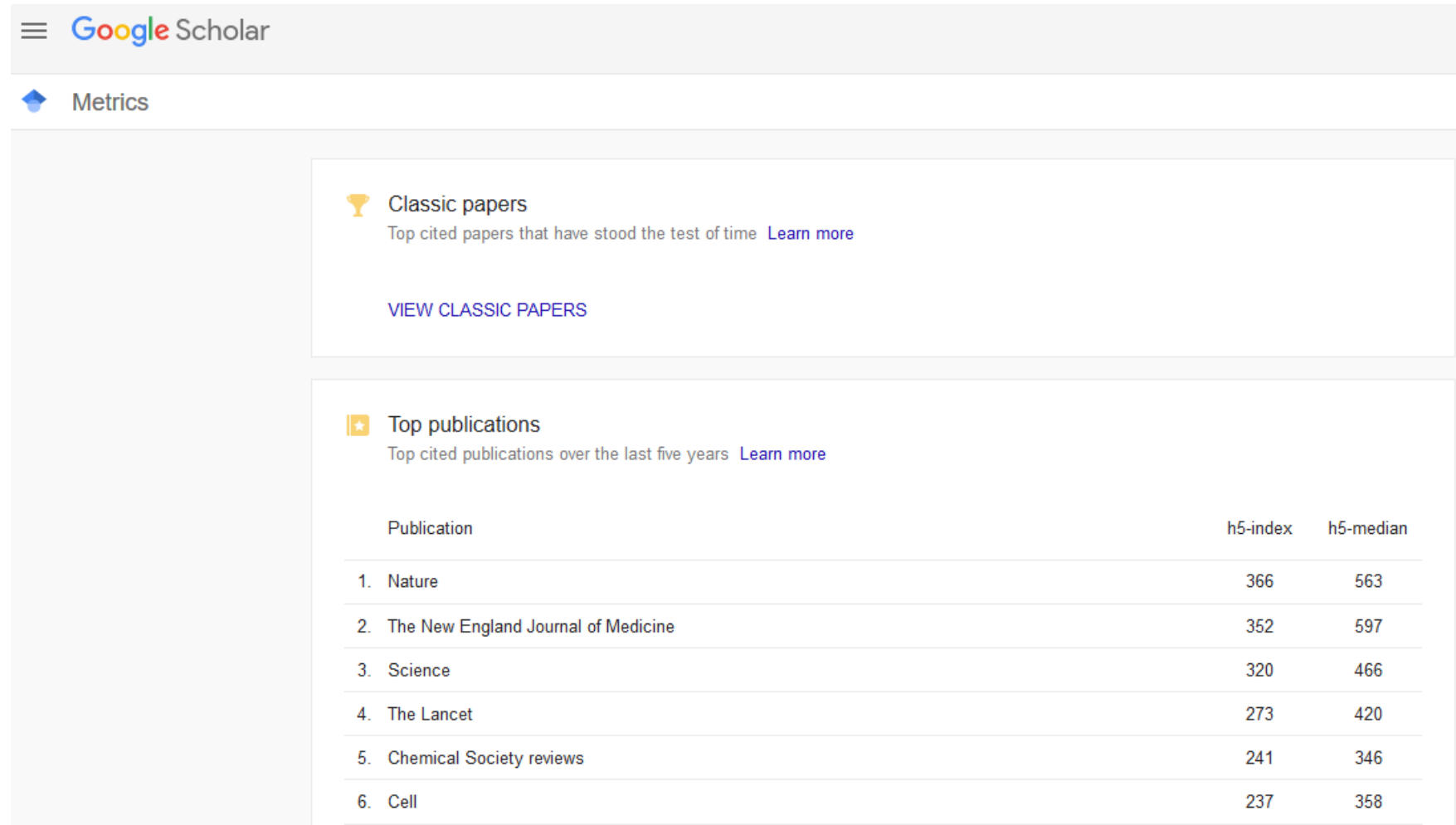
For example:

- When was the article written?
- Who wrote the article?
- How important is the reading?
- How relevant is the reading to your assignment?
- Are the ideas logical?
- Are the ideas still relevant?
- Is the work biased?
- How valid are the conclusions?

	<i>Questions to ask:</i>
Accuracy	<ul style="list-style-type: none">• Is the information reliable?• Is the information error-free?• Is the information based on proven facts?• Can the information be verified against other reliable sources?
Authority	<ul style="list-style-type: none">• Who is the author?• Does he or she have the qualifications to speak/write on that topic?• Is the author affiliated with a reputable university or organization in this subject field?
Objectivity	<ul style="list-style-type: none">• What is the intended purpose of the information?• Is the information facts or opinions?• Is the information biased?
Currency	<ul style="list-style-type: none">• When was the information published?• Is the information current or out-dated?• Does currency matter in this topic?
Coverage	<ul style="list-style-type: none">• Does the information covered meet your information needs?• Does it provide basic or in depth coverage?

Credible Publications defined by Venue

- There are some top journals / conferences which are very competitive. Hence, only excellent publications will be published.



The screenshot shows the Google Scholar Metrics page. At the top, there is a navigation bar with the Google Scholar logo and a hamburger menu icon. Below the navigation bar, there is a section titled "Metrics" with a blue icon. The main content area is divided into two sections: "Classic papers" and "Top publications".

Classic papers
Top cited papers that have stood the test of time [Learn more](#)

[VIEW CLASSIC PAPERS](#)

Top publications
Top cited publications over the last five years [Learn more](#)

Publication	h5-index	h5-median
1. Nature	366	563
2. The New England Journal of Medicine	352	597
3. Science	320	466
4. The Lancet	273	420
5. Chemical Society reviews	241	346
6. Cell	237	358

Journal Impact Factor

$$\text{Impact Factor} = \frac{\text{Number of citations of a journal received in previous two years}}{\text{Number of published articles of a journal in previous two years}}$$

- Not necessarily a good metric:
 - Quality of citations might differ
 - Some journals push authors to cite a lot of articles from the journal in order to get the article accepted

Conference Acceptance Rate

- Difference between “Abstract”-only submission or full paper submission with double blind peer review
- Top conferences have acceptance rates of less than 25% for full paper submissions after blind review
- Usually, scientific communities have lists about their top-tier conferences. Google metrics also is an indicator here...

How would I judge if a source matches my topic?

Simple answer: Read it ;)

Prior to spending time reading the paper and finding out it was not worth it:

- Check publication venue (Journal, Conference, etc. from area known to publish relevant publications).
- You might derive this information from other relevant papers you have already identified.
- A source might not fit if it is from a completely different scientific community.
 - E.g. social sciences and economics also writes papers about IoT, however, usually we would look for papers from technical sciences.

See you next week for English Language in Scientific Writing!