



SLIIT

Discover Your Future

MODULE INTRODUCTION



SLIIT
FACULTY OF COMPUTING

Module Content



SEMESTER LONG
PROJECT



PROJECT MANAGEMENT
KNOWLEDGE AREAS



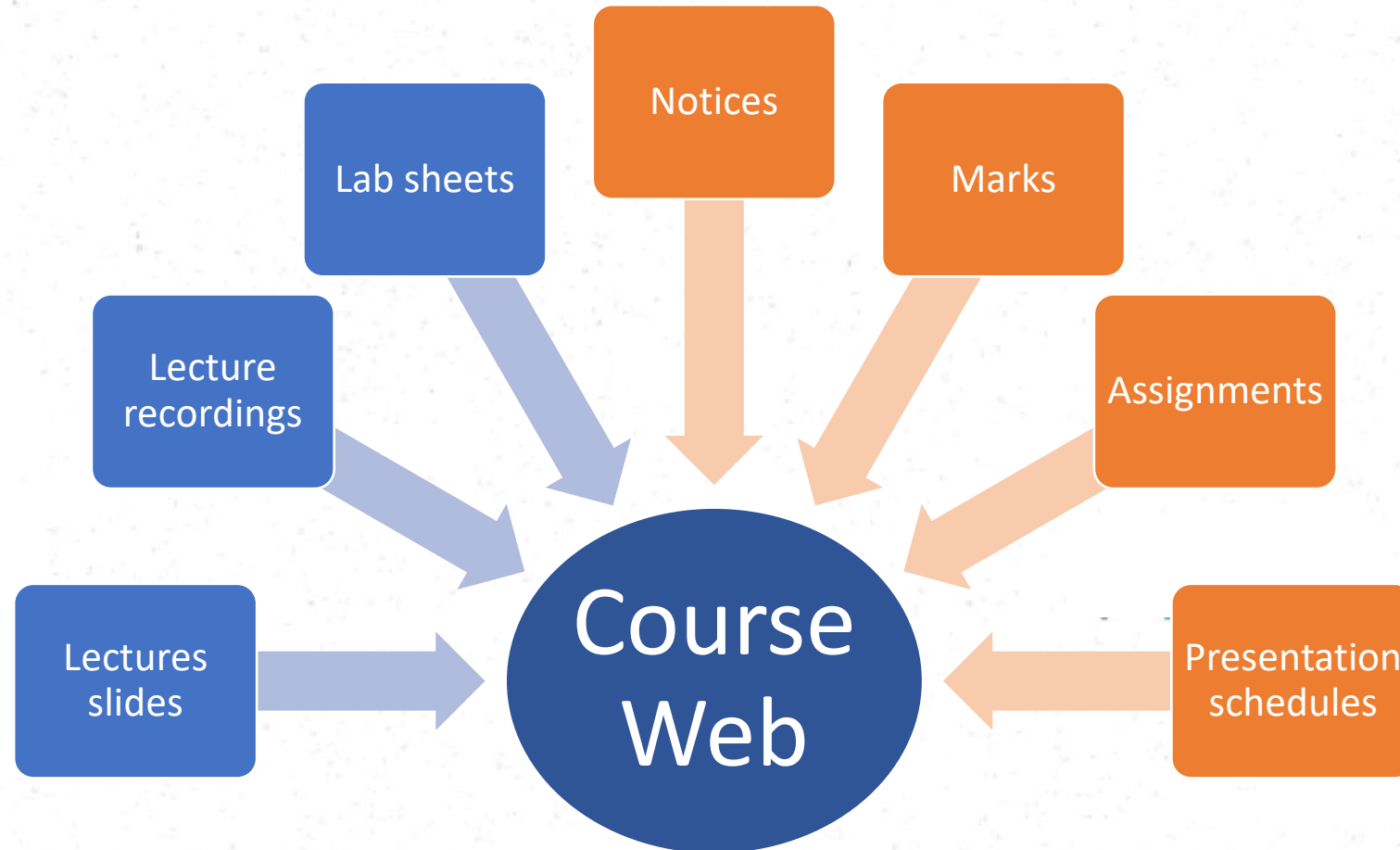
TOOLS FOR MANAGING
THE PROJECT

Skills Developed

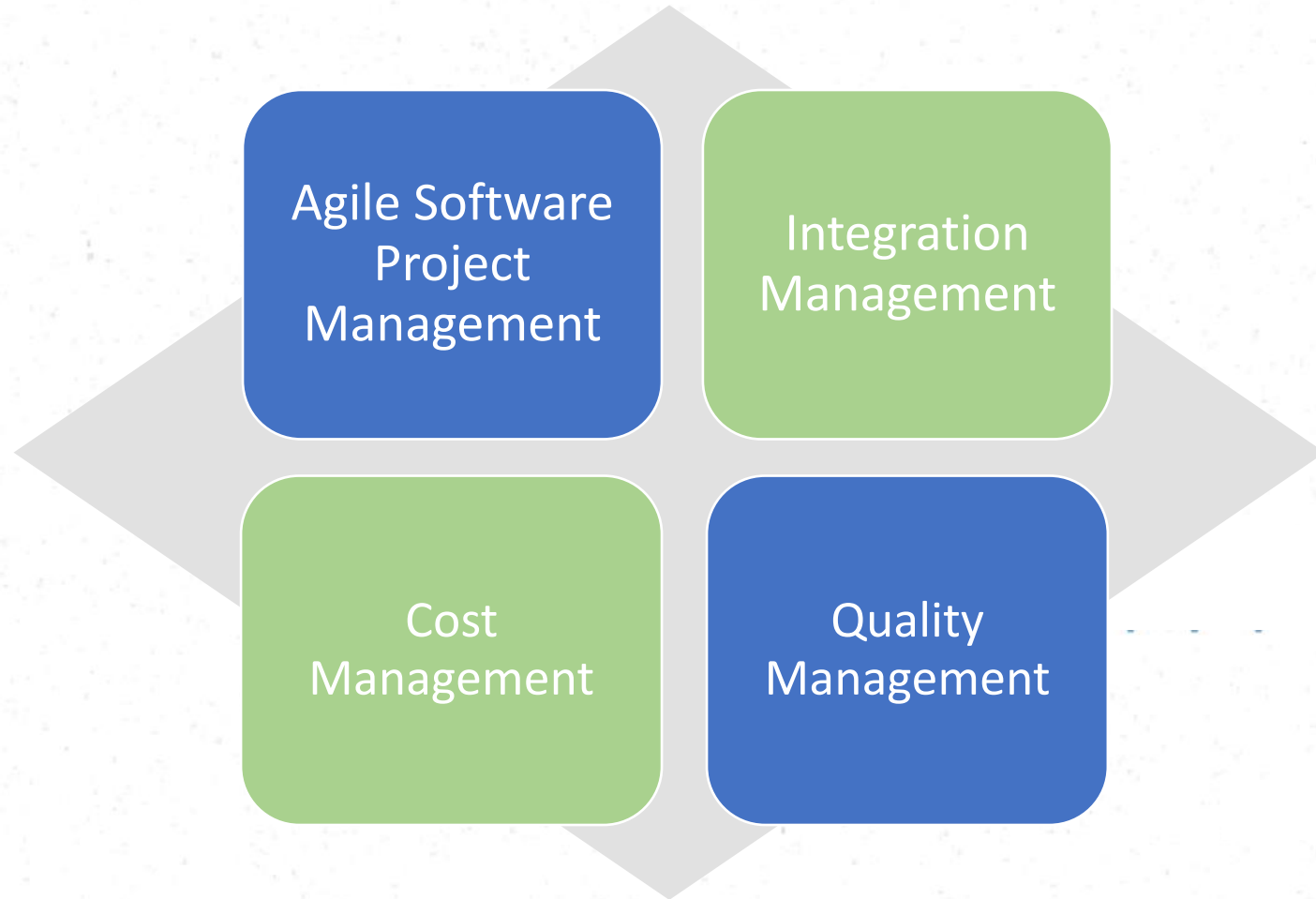


- Team-working skills
- Organizing and planning skills
- Decision making skills
- Time management skills
- Leadership skills
- Initiative skills
- Analytical skills
- Learning skills
- Communication skills
- Working under competitive conditions

Resources and Materials



Lectures

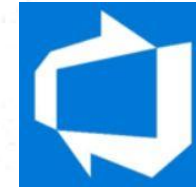


Lectures



Practicals

- Self-learning practicals on:
 - Azure Devops - Agile project management tool
 - SonarQube – Code quality inspection tool
 - Git – Distributed version control system
 - Selenium – Test automation frameworks



Group Formation



- A team with a **maximum of four members**
- One member from the team to email the group details to ***SPM3080@gmail.com*** :

Registration No	Name with Initials	SLIIT Email Address	Personal Email Address	Contact No
ITXXXXXXXX	A. M. D. Perera	ITXXX@sliit.lk	ap@gmail.com	07XXXXXXXX

- Subject of the email should be the **assigned lab group**

Assessment Plan

Assessment No	Assessment Name	Assessed Week	Marks Distribution
Assessment 1	Topic & function approval presentation	Week 2	6%
Assessment 2	Progress presentation	Week 6	16%
Assessment 3	Final presentation	Week 10	18%
Assessment 4	Progress of the research paper	Week 4 & Week 9	10%
	Presentation & viva	Week 12	20%
Assessment 5	Final examination	Week 15	30%



SLIIT

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Introduction to Research and Scholarly Communication



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What is a research?

- The process of conducting a systematic and methodical investigation to either create new knowledge or utilize existing knowledge in new and innovative ways, leading to the development of fresh concepts, methodologies, and understandings.
- Involves gathering and analyzing information, formulating hypotheses, conducting experiments, and drawing conclusions based on evidence.

What is a research paper?

■ Content of a research paper:

- Abstract - Provides a concise summary of the key points of the paper, including the research problem, objectives, methods, results, and conclusions.
- Introduction - Provides an overview of the background of the topic, problem statement, significance of the research, research questions, and a preview of the remaining sections of the paper
- Literature review - Summarizes existing research on the topic
- Methodology - Explains the research design and procedures
- Results - Presents the findings of the study
- Discussion - Interprets and contextualizes the results considering the research questions and existing knowledge
- Conclusion - Summarizes the key findings, interpret their implications, and provide practical recommendations for future research or practice
- Reference - Lists the sources cited in the research paper

Abstract Vs Conclusion

Aspect	Abstract	Conclusion
Length	Usually limited to 150-250 words, depending on the journal or conference requirements.	Can vary in length depending on the complexity of the study, but typically longer than the abstract.
Content	Provides a brief summary of the research problem, objectives, methods, results, and conclusions of the study.	Summarizes the key findings of the study and explains their implications, limitations, and recommendations for future research or practice.
Audience	Intended for readers who want to quickly understand the main points of the paper before reading the full text.	Intended for readers who have already read the full paper and want to understand the main implications and contributions of the study.

Citing Vs Listing

Citing

Complexity metrics have a lot of potential uses which include: provision of feedback during a software project to help control the design activity, and provision of detailed information about software modules to help pinpoint areas of potential instability during testing and maintenance. Cyclomatic complexity is the most widely used complexity metric for computer software [12]. It is a software metric that provides a quantitative measure of the logical complexity of a program. The introduction of cognitive informatics to the software engineering domain through the work of Wang [13] has brought about the emergence of a new set of complexity metrics referred to as cognitive complexity metrics. These metrics introduce cognitive weights - which define the effort required, relative time or extent of difficulty in comprehending software. In cognitive informatics, the functional complexity of software in design and comprehension depends on three key elements namely: its input, internal processing and output [14]. Initially three basic control structures (BCS), branch, iteration and sequence were identified [15]. However, the work of Shao and Wang [14] modified these BCSs and introduced what obtains in Table 1. These BCSs are the fundamental logic building blocks of software.

Listing

REFERENCES

- [11] T. J. McCabe and A. H. Watson, "Software complexity," *Crosstalk*, vol. 7, no. 12, pp. 5-9, 1994.
- [12] R. S. Pressman, *Software Engineering: A Practitioner's Approach*. New York, NY, USA: McGraw-Hill, 2005, pp. 649-672.
- [13] Y. Wang, "On the cognitive informatics foundations of software engineering," in *Proc. ICCI*, 2004, pp. 22-31.
- [14] J. Shao and Y. Wang, "A new measure of software complexity based on cognitive weights," *Electr. Comput. Eng., Can. J.*, vol. 28, no. 2, pp. 69-74, Apr. 2003.
- [15] C. A. R. Hoare *et al.*, "Laws of programming," *Comm ACM*, vol. 30, no. 8, pp. 672-686, Aug. 1987.

Identifying a research problem

- Steps to follow:
 - Identify a general area of interest
 - Conduct a literature review and identify gaps in knowledge or areas that have not been explored in depth
 - Based on your review of the literature, brainstorm potential research questions that could be investigated to address the gaps or unanswered questions in the field.
 - Evaluate the feasibility of investigating each potential research question, considering factors such as available resources, data availability, and ethical considerations.
 - Refine the research questions based on feedback from peers or experts in the field, and ensure that they are specific, focused, and answerable
 - Consider the potential implications and impact of each research question and determine the possible consequences and benefits that they may have on various stakeholders.

Guidelines

- Do not write a research paper in the first person. Instead, use the third person.
- Do not use the speaking style in research paper writing.
- Do not have lengthy sentences.
- Do not use words such as "so". Instead, use words such as “thus”, “hence”, “therefore”, “accordingly”, etc.
- Be specific. Do not say the following figure, table, or sub-section. Instead, use numbers. For example, Table 1, Fig. 1, sub-section 1.2, etc.

Guidelines

- The text of figures and tables should be clearly visible when the document is viewed at 100% zoom level.
- Do not include the tables and equations as pictures.
- Number the equations in the paper.
- A reference should be given to figures, tables, and equations from the body of the paper before including them.
- It is possible to directly copy and paste sentences from other sections of the paper into the abstract

Conference Papers Vs Journal Articles

Aspect	Conference Papers	Journal Articles
Publication Format	Proceedings of a conference (book or online)	Scholarly journals (printed or online)
Page Size	Range from 6 to 8 pages	Range from around 10 to 20 or more pages
Presentation Requirement	Presented at a conference	Not required to be presented
Peer-Review Process	Subject to a streamlined review process that can take a few weeks to a few months	Subject to a more rigorous review process that can take several months to a year or more

How to find Scopus indexed papers

- Go to Scopus : <https://www.scopus.com/sources.uri>



Scopus Preview

Author Search

Sources



Create account

Sign in

Sources

Title



Enter title

Find sources



Improved Citescore

We have updated the CiteScore methodology to ensure a more robust, stable and comprehensive metric which provides an indication of research impact, earlier. The updated methodology will be applied to the calculation of CiteScore, as well as retroactively for all previous CiteScore years (ie. 2018, 2017, 2016...). The previous CiteScore values have been removed and are no longer available.

[View CiteScore methodology.](#)



Filter refine list

Apply

Clear filters

Display options

☐ Display only Open Access journals

Counts for 4-year timeframe

☒ No minimum selected

☐ Minimum citations

44,034 results

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Export to Excel

Save to source list

View metrics for year:







2021



	Source title ↓	CiteScore ↓	Highest percentile ↓	Citations 2018-21 ↓	Documents 2018-21 ↓	% Cited ↓	
<input type="checkbox"/> 1	Ca-A Cancer Journal for Clinicians	716.2	99% 1/360 Oncology	76,632	107	91	

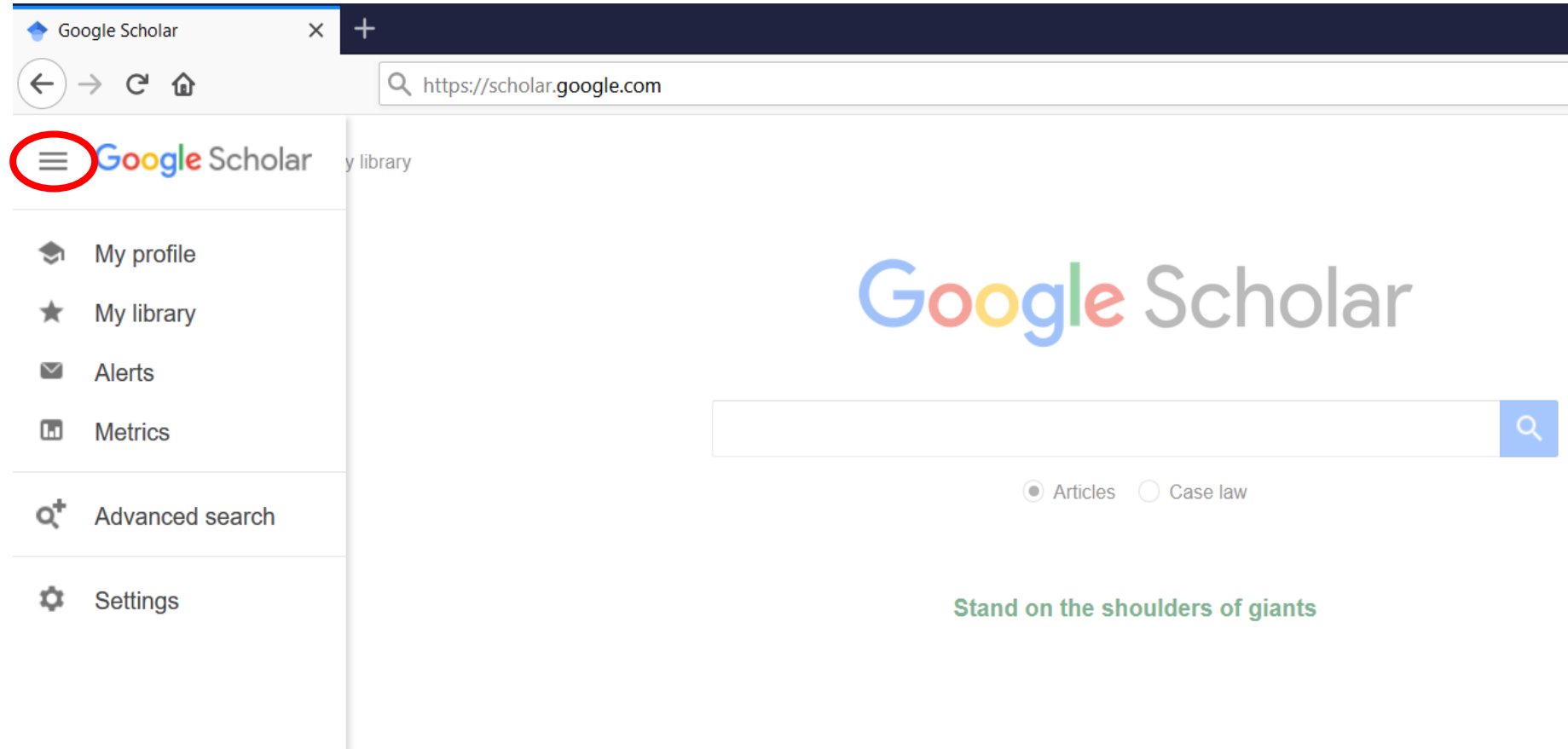
How to find Scopus indexed papers

- Select “*Subject area*” from the first dropdown list.
- Select a subject area that matches your research topic from the “*Enter subject area*” field.

<p>Subject area </p> <p> Improved Citescore We have updated the CiteScore of research impact, earlier. The previous CiteScore years (i.e. 2015-2016) are no longer available. View CiteScore methodology.</p> <p>or refine list</p>	<p>Enter subject area</p> <p><input type="checkbox"/> spectroscopy</p> <p> <input type="checkbox"/> Computer Science</p> <ul style="list-style-type: none"><input type="checkbox"/> Artificial Intelligence<input type="checkbox"/> Computational Theory and Mathematics<input type="checkbox"/> Computer Graphics and Computer-Aided Design<input type="checkbox"/> Computer Networks and Communications<input type="checkbox"/> Computer Science (miscellaneous)<input type="checkbox"/> Computer Science Applications<input type="checkbox"/> Computer Vision and Pattern Recognition<input type="checkbox"/> General Computer Science
	<p>Subject area </p> <p><input type="checkbox"/> chronology</p> <p> <input type="checkbox"/> Multidisciplinary</p> <ul style="list-style-type: none"><input type="checkbox"/> Multidisciplinary <input type="checkbox"/> Neuroscience<input type="checkbox"/> Behavioral Neuroscience<input type="checkbox"/> Biological Psychiatry<input type="checkbox"/> Cellular and Molecular Neuroscience

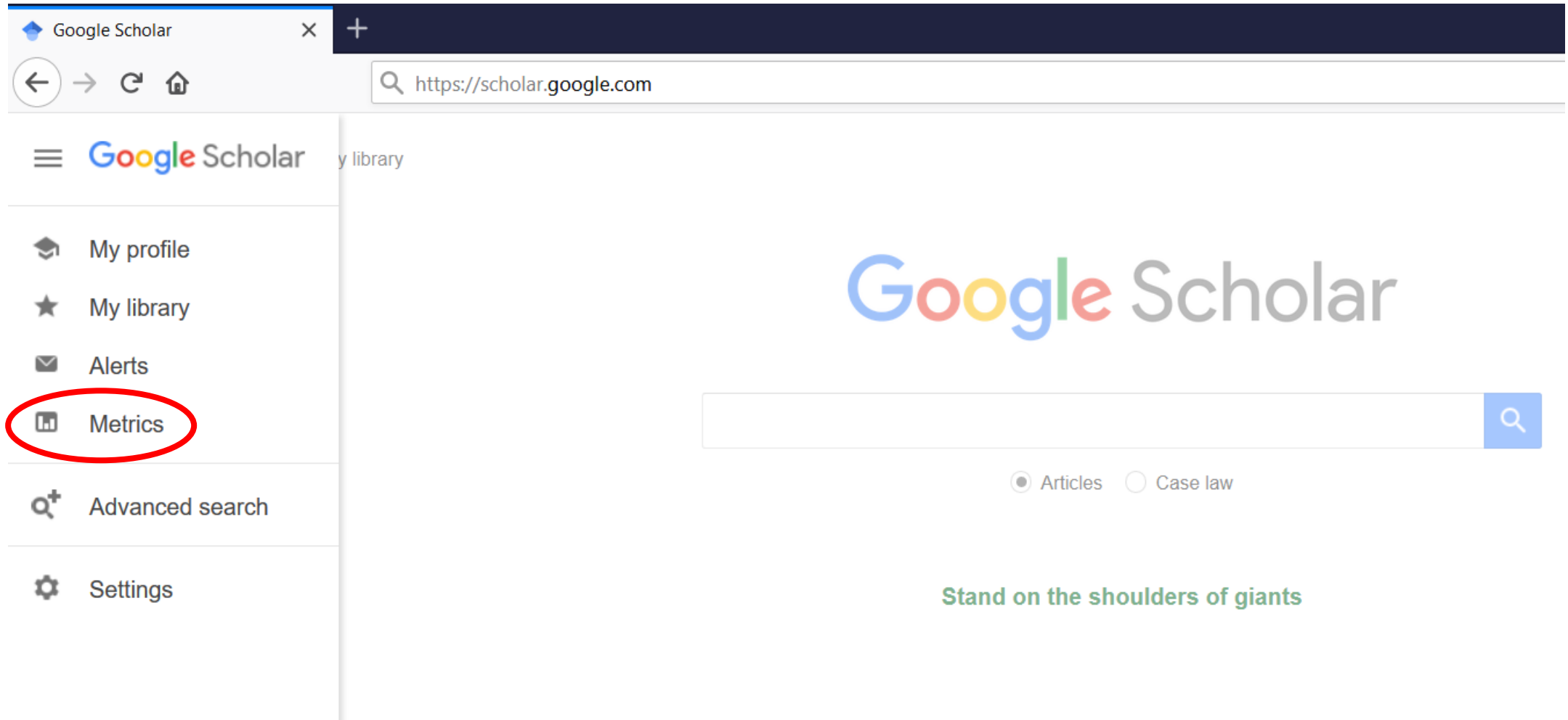
How to find the H5-index of a conference

- Go to Google scholar - <https://scholar.google.com/>
- Click on the *3 horizontal bar* icon at the top left corner



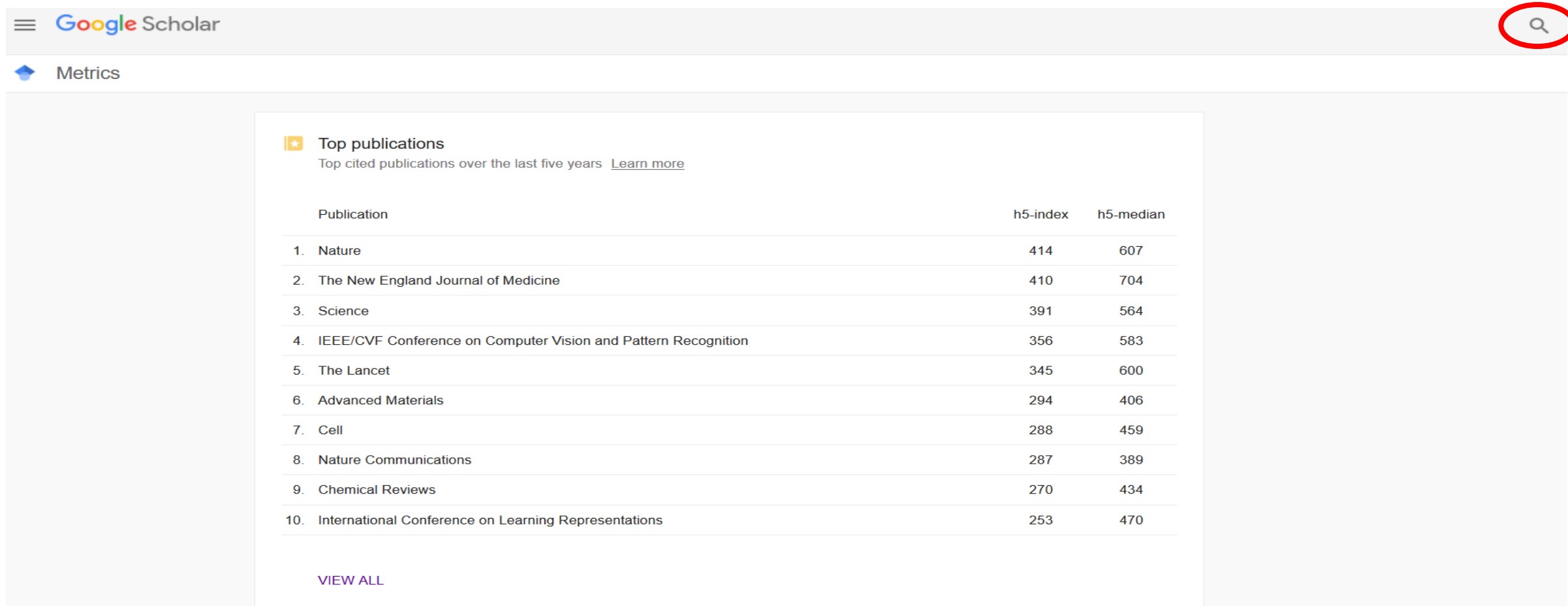
How to find the H5-index of a conference

- Click on *Metrics*



How to find the H5-index of a conference

- Click on the *magnifying glass* icon



The screenshot shows the Google Scholar Metrics page. At the top, the Google Scholar logo is on the left, and a magnifying glass icon is circled in red on the right. Below the logo, the 'Metrics' section is visible. The main content area displays 'Top publications' with a subtitle 'Top cited publications over the last five years' and a link to 'Learn more'. A table lists the top 10 publications, their h5-index, and h5-median. The publications are ranked by h5-index, with 'Nature' at the top.

Publication	h5-index	h5-median
1. Nature	414	607
2. The New England Journal of Medicine	410	704
3. Science	391	564
4. IEEE/CVF Conference on Computer Vision and Pattern Recognition	356	583
5. The Lancet	345	600
6. Advanced Materials	294	406
7. Cell	288	459
8. Nature Communications	287	389
9. Chemical Reviews	270	434
10. International Conference on Learning Representations	253	470

[VIEW ALL](#)

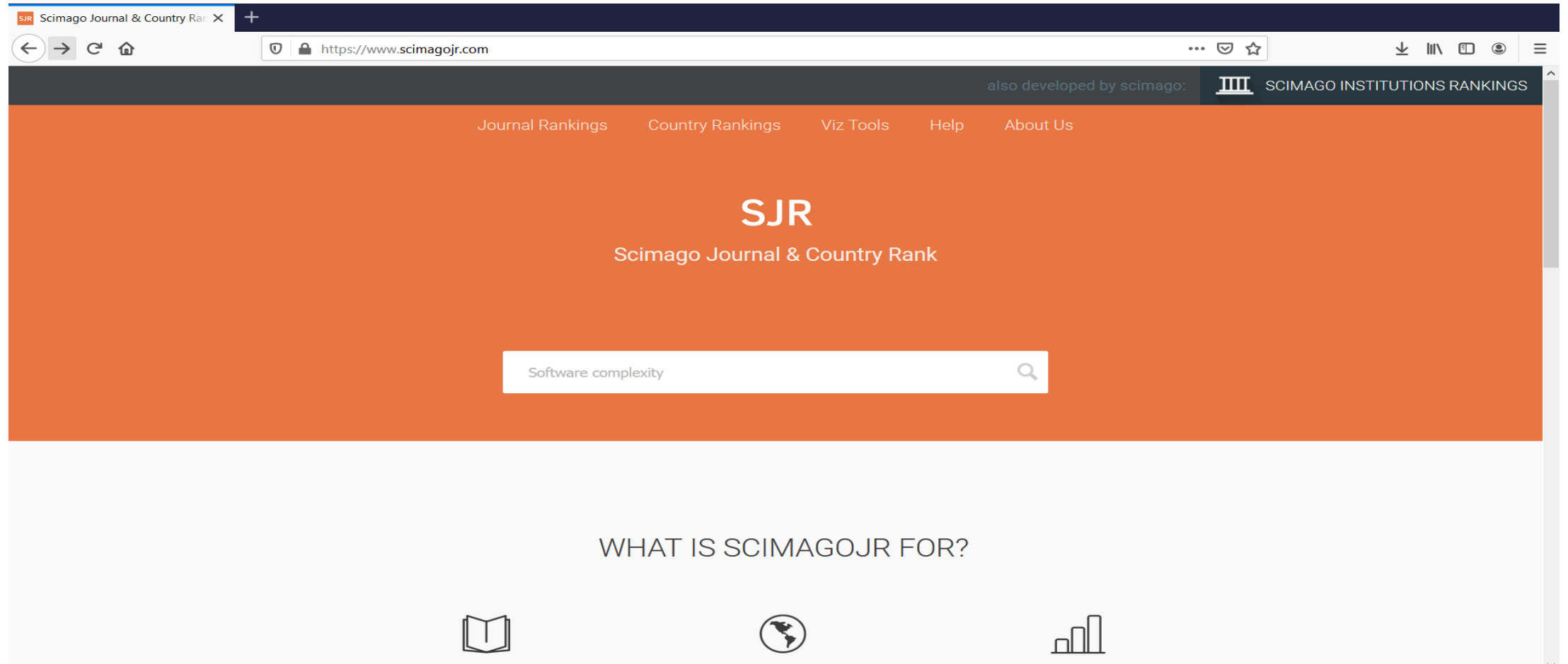
How to find the H5-index of a conference

- Search for the conference by typing its name:

← International Conference on Software Engineering 🔍			
Top 20 publications matching <i>International Conference on Software Engi...</i>			
	Publication	<u>h5-index</u>	<u>h5-median</u>
1.	ACM/IEEE International Conference on Software Engineering	<u>76</u>	113
2.	ACM SIGSOFT International Symposium on Foundations of Software Engineering	<u>57</u>	93
3.	IEEE/ACM International Conference on Automated Software Engineering (ASE)	<u>47</u>	77
4.	IEEE/ACM International Conference on Computer-Aided Design (ICCAD)	<u>39</u>	58
5.	International Symposium on Empirical Software Engineering and Measurement, ESEM	<u>28</u>	39
6.	International Conference on Agile Processes in Software Engineering and Extreme Programming (XP)	<u>26</u>	34
7.	ACM International Conference on Software Engineering: Software Engineering in Practice	<u>24</u>	43
8.	International Conference on Electrical, Computer and Communication Engineering	<u>24</u>	35
9.	International Conference on Computer Science and Engineering	<u>23</u>	36
10.	IEEE International Conference on Computer Design, ICCD	<u>23</u>	32
11.	International Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering	<u>23</u>	31
12.	International Conference on Evaluation and Assessment in Software Engineering	<u>23</u>	31
13.	ACM International Conference on Mobile Software Engineering and Systems	<u>22</u>	33

How to find the H-index of a journal

- Go to Scimago Journal Rankings - <https://www.scimagojr.com/>



How to find the H-index of a journal

- Search for the journal by typing its name

The screenshot displays the Scimago Journal Search website. The browser's address bar shows the URL `https://www.scimagojr.com/journalsearch.php?q=Software+Engineering`. The website's header includes the 'SJR' logo, the text 'Scimago Journal & Country Rank', and a search bar with the placeholder 'Enter Journal Title, ISSN or Publisher Name'. A navigation menu below the header contains links for 'Home', 'Journal Rankings', 'Country Rankings', 'Viz Tools', 'Help', and 'About Us'. The main content area features a search input field containing 'software engineering'. To the right of the input field, it indicates '1 - 50 of 625' results. Below the search bar, three journal entries are listed:

- IEEE Transactions on Software Engineering**
United States
Institute of Electrical and Electronics Engineers Inc.
- Proceedings - International Conference on Software Engineering**
United States
IEEE Computer Society
- Advances in Engineering Software**
United Kingdom
Elsevier Ltd.