Research Methodology

Lecture 3: Paper writing

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UNIVERSITY OF TRENTO - Italy
Department of Information Engineering
and Computer Science

Why papers?

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- To put things into writing helps your own understanding of the subjects

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- It allows sharing your ideas and results with the world
- It serves as a recognition of the work done
- Helps future researches in continuing the journey
- Creates a track record of the work done relatively to a specific subject

Where to start

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- Always consider the audience

Where to start

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- Always consider the audience
  - Read what has been published before in a specific journal (conference)
    1. Understand the scientific background
    2. Understand the language
    3. Understand the audience of the journal (conference)

nature publishing group npg

IEEE

Where to start

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- Kinds

1. Short-papers (extended Abstracts)
2. Conference paper
3. Invited talks
4. Letters
5. Technical Report
6. Journal (original research) Paper
7. Fast-track submissions
8. Review paper
9. Books

nature publishing group npg

IEEE

A good paper must

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- Be clearly written (language, structure, communication)
- Be Reproducible (it should be checkable)
- Clearly state the novelty (what is special about this paper)
- Add to the field (prove the sense of this novelty)
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Check-list

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Practical example

- What is my goal? *I want to improve the frame rate in ultrasound imaging*
- Why? *It is of interest for cardiac imaging*
- How is it done today? *Parallel receive beamforming*
- What are the limitations? *It does not apply to harmonic imaging, it deteriorates spatial resolution*
- What did I try to do? *I try to use focused beams and OFDM*
- What have I done? *I tested the impact of different parameters on key imaging features and compared the performance of my approach with the existing approach*
- How did I did it? *Numerically and Experimentally, provide all the details. Software used, parameters tested, instruments used.*
- How could I have done it? *I could have done it with coding but…, I could have done it by spatial distribution but..*
- What will I do next? *I will test it in-vivo*
- Does my colleague grasps what this is about?

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- Tentative title (is it a fair, comprehensive and attractive description of the content?)

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Repeat and refine

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- Conclusions: 200-300 words
- Appendixes: free choices, but length has its costs

Each part is a (narrower) filter

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- Title: attract many readers

Each part is a (narrower) filter

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- Title: attract many readers
- Abstract/conclusions : you want the first selection happens here

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- Abstract/conclusions : you want the first selection happens here
- Body/introduction: people interested in the work done
- Appendixes: people that want to reproduce the work done

Practical tips

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- Once you have written the paper, leave it alone for a few days

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- Do not get impatient to submit – Do not wait for too long

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- Do not get impatient to submit – Do not wait for too long
- To find the references:
  - Ask people: colleagues, supervisor..
  - Read the literature
  - Use the references in the literature
  - Use, e.g., Scopus (check who has been citing your references)

Practical tips

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https://www.scopus.com/authid/detail.uri?origin=resultslist&authorId=25654681100&zone=

Export all | Add all to list | Set document alert | Set document feed

Document title	Authors	Year	Source	Cited by
Target recognition by means of polarimetric ISAR images	Martorella, M., Giusti, E., Demi, L., (...), Berizzi, F., Bates, B.	2011	IEEE Transactions on Aerospace and Electronic Systems 47(1),5705672, pp. 225-239	48
View abstract · Full Text Finder · Related documents				
A contrast source method for nonlinear acoustic wave fields in media with spatially inhomogeneous attenuation	Demi, L., Dongen, K.W.A.V., Verweij, M.D.	2011	Journal of the Acoustical Society of America 129(3), pp. 1221-1230	31
View abstract · Full Text Finder · Related documents				
Comparison of fundamental, second harmonic, and superharmonic imaging: A simulation study	Van Neer, P.L.M.J., Danilouchkine, M.G., Verweij, M.D., (...), Van Der Steen, A.F.W., De Jong, N.	2011	Journal of the Acoustical Society of America 130(5), pp. 3148-3157	27
View abstract · Full Text Finder · Related documents				
Parallel transmit beamforming using orthogonal frequency division multiplexing applied to harmonic Imaging-A feasibility study	Demi, L., Verweij, M., Van Dongen, K.W.A.	2012	IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control 59(11),6343270, pp. 2439-2447	24
View abstract · Full Text Finder · Related documents				View the documents that references this one
4-D spatiotemporal analysis of ultrasound contrast agent dispersion for prostate cancer localization: A feasibility study	Schalk, S.G., Demi, L., Smeenge, M., (...), Wijkstra, H., Mischi, M.	2015	IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control 62(5),7103524, pp. 839-851	21
View abstract · Full Text Finder · Related documents				
Implementation of parallel transmit beamforming using orthogonal frequency division multiplexing-achievable resolution and interbeam interference	Demi, L., Viti, J., Kusters, ., (...), Tortoli, P., Mischi, M.	2013	IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control 60(11),6644735, pp. 2310-2320	21

Practical tips

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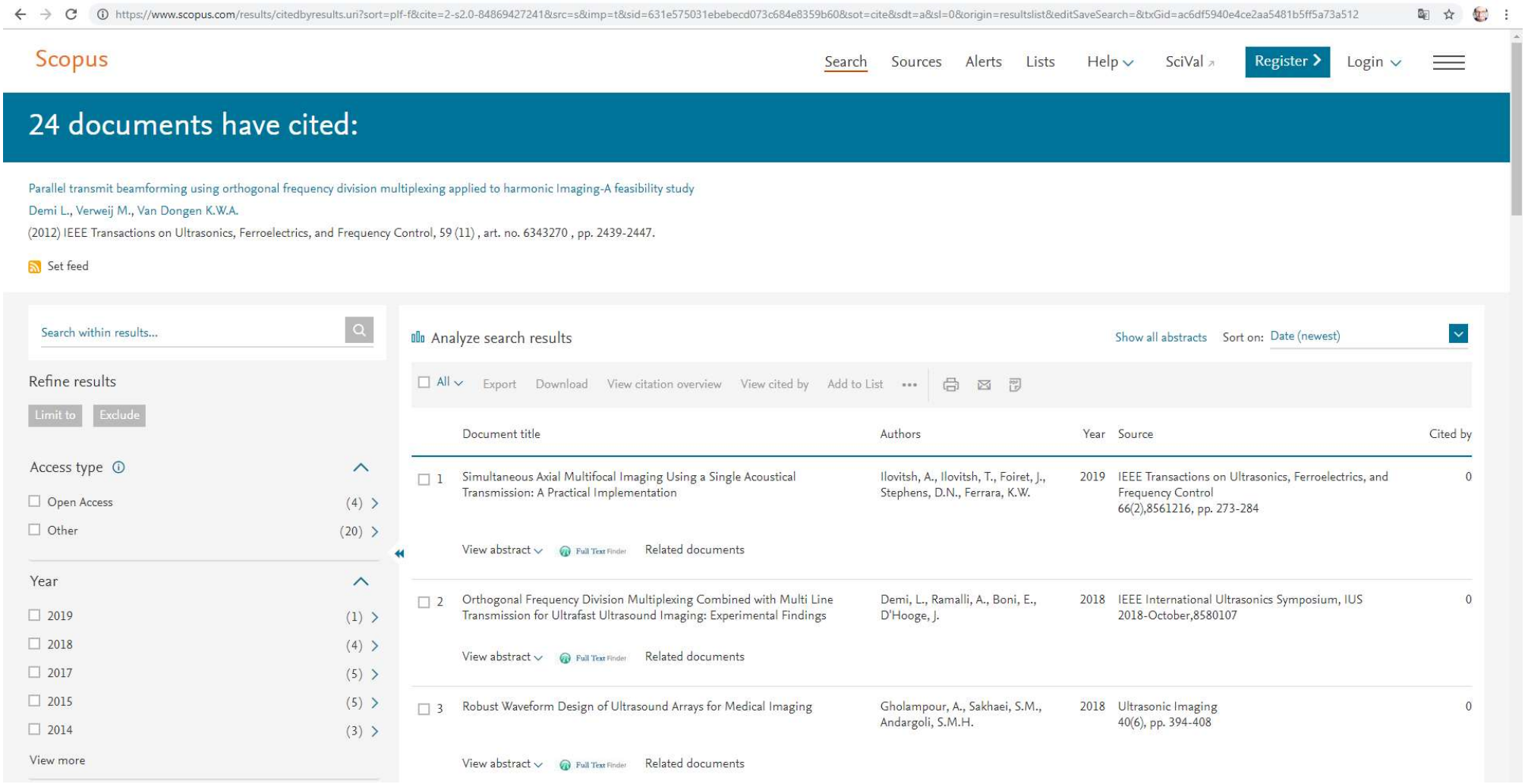

The style

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