문헌검색과 논문읽기 (2)

Reading Paper
Contents

- What is paper?
- Efficient reading
- Additional information in paper
- Experiences on reading papers
What is paper?

- Paper
  - An academic work that is usually published in an academic journal.
    ✓ Explanation

- Only be considered valid if it undergoes a process of **peer review** by one or more referees (who are academics in the same field) who check that the content of the paper is suitable for publication in the journal.
  ✓ Persuasive
What is paper?

- Categories of paper
  - Research paper
  - Letter
  - Case report
  - Review article
  - Commentary
What is paper?

- Typical structure
  - Abstract
  - Introduction
  - Materials and Methods
  - Results
  - Discussion
  - Conclusion
  - Acknowledgement
  - Author contribution
  - Conflicts of interest
  - References
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving proprioceptive deficits after stroke through robot-assisted training of the upper limb: a pilot case report study</td>
<td>Calo, R., Sterpi, I., Mazzone, A., Delconte, C., Pisanò, F.</td>
<td>2016</td>
<td>Neurocase</td>
</tr>
<tr>
<td>Rhythmic arm movements are less affected than discrete ones after a stroke</td>
<td>Leconte, P., Orban de Xivry, J.-J., Stoquart, G., Lejeune, Y., Romisz, R.</td>
<td>2016</td>
<td>Experimental Brain Research</td>
</tr>
<tr>
<td>Control of the e2rebot platform for upper limb rehabilitation in patients with neuromotor impairment</td>
<td>Fria, J.-C., Pérez-Turiel, J., Vivas, P., (...) Mihai, L., Franco-Martin, M</td>
<td>2016</td>
<td>Advances in Intelligent Systems and Computing</td>
</tr>
</tbody>
</table>
Efficient reading

1,136 document results

TITLE-ABS-KEY (rehabilitation AND robot AND upper-limb)

Refine results

Access type

- Open Access: 28
- Other: 1,108

Year

- 2018: 17
- 2017: 137
- 2016: 128
- 2015: 118
- 2014: 108

※ 2018.2.20 search results
1) Abstract

- Paragraph that tells you what the article is about

Read Abstract to know the research paper

✓ Does it tell you what the work is about?
✓ Does it address the main methods used in the study?
✓ Does it provide a well-defined conclusion to the study?

Source: from “The Art of Reading a Research Paper”
2) Introduction

- To introduce you to the research topic
- To create awareness about references and earlier reviews that form the basis of the work
- To summarize the main result of the investigation in a simplified form

Read Introduction to understand the fundamentals

A repetition of Abstract? ➔ No!
✓ Mention of References to earlier scientific literature
✓ Brief explanation of Result

Source: from “The Art of Reading a Research Paper”
3) Discussion

- **Summary of the results obtained and its significance**
  → Describing all the results, from the perspective of their significance to the experiment
- **Principles and relationships behind the findings documented in the results section of the paper**
- **Evidence drawn from each conclusion that is made**
- **Implications of the research**
- **Window to future directions of progress**

Read Discussion to know significance of the research

---

*Source: from “The Art of Reading a Research Paper”*
4) Results

- Main reason why the research paper is there

Comprehending Results

➡ Do Not RUSH!

✓ Pay attention to the subheadings in the results section
✓ Read the results piece by piece
✓ Pay attention to graphs and figures

Source: from “The Art of Reading a Research Paper”
5) Materials and Methods

- Procedures used to carry out the experiment
- Materials used in the process

Reading the Materials and Methods

- It introduces you to the techniques that have been used in the experiment.
- It provides information on materials that may be useful in the work that you are carrying out.
- You are expected to know this - after all you are a graduate student!!


Source: from “The Art of Reading a Research Paper”
Efficient reading: Summary

- **Do**
  - Read the **Abstract**. It helps you decide how meaningful the article is to you.
  - Concentrate on the references in the **Introduction**. They are your passport to understanding the concept better.
  - Read the **Discussion** after reading the introduction. It helps you understand the results and the reason why the experiment was conducted in the first place.
  - Pay close attention to the **future directions and implications** of the study. It helps you think in new directions of research.
  - Pay attention to the subheadings in the **Results** section; they are the results themselves.
  - Read the **Results** step by step.
  - Have ready access to data pertaining to the subsection of the **Results** that you are reading.
  - Read the **Materials and Methods**, after you have understood the implications of the research.

*Source: from “The Art of Reading a Research Paper”*
Efficient reading: Summary

- Do NOT
  - Skip the **Introduction**.
    It provides the background for your reading.
  - Read the **Materials and Methods** immediately after the introduction.
    It will make sense once you understand the results.
  - Rush through the **Discussion**.
    The slower it is read, the easier it is to cope with the results.
  - Rush through the **Results**.
    They are the reason for the paper to get published.
  - Skip the **Materials and Methods** if you find the paper to be of great relevance to your work.

*Source: from “The Art of Reading a Research Paper”*
Additional information in paper

- **References**
  - Helper for literature study
  - Helper for understanding concept of the research
  - Indirect evidence

- **Authors**
  - First author
    - Main writer
    - The person who know the details of the research work
  - Corresponding author
    - Concept builder
    - Usually PI (Principal Investigator)
Robotic techniques for upper limb evaluation and rehabilitation of stroke patients

Colombo, R., Pisano, F., Micera, S., (...), Dario, P., Minuco, G.

2005 - IEEE Transactions on Neural Systems and Rehabilitation Engineering, 13(3), pp. 311-324

220 documents have cited:

- Robotic techniques for upper limb evaluation and rehabilitation of stroke patients
  Colombo R., Pisano F., Micera S., Mazzone A., Delconte C., Chiara Carozza M., Dario P., Minuco G.
**Additional information in paper**

<table>
<thead>
<tr>
<th>Document title</th>
<th>Authors</th>
<th>Year</th>
<th>Source</th>
<th>Cited by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robotic techniques for upper limb evaluation and rehabilitation of stroke patients</td>
<td>Colombo, R., Pisano, F., Micera, S., ...</td>
<td>2005</td>
<td>IEEE Transactions on Neural Systems and Rehabilitation Engineering, 13(3), pp. 311-324</td>
<td>220</td>
</tr>
</tbody>
</table>

**Author details**

Dario, Paolo

- Scuola Superiore Sant'Anna di Studi Universitari e di Perfezionamento, The BioRobotics Institute, Pisa, Italy
- Author ID: 0000-0002-4686-400

**Subject area**

- Engineering
- Computer Science
- Medicine
- Physics and Astronomy
- Mathematics
- Chemistry
- Materials Science
- Chemistry, Materials Science
- Computer Science, Artificial Intelligence
- Computer Science, Biomedical
- Engineering, Bioengineering
- Materials Science, Composites
- Neuroscience
- Health Professions
- Agricultural and Biological Sciences
- Energy

**Document and citation trends**

- Year: 2006
- Citations: 61
- View all
- Get citation alerts
- Add to ORCID
- Request author detail corrections
- Export profile

**818 Documents**

- Cited by 10601 documents
- 150 co-authors

**Author History**

- View all in search results format
- Export all to CSV file
- Save all to list
- Set document alert
- Set document feed

**Documents by author**

- 818 Documents
- Cited by 10601 documents

- Export abstract
- View Publisher
- Related documents

- Follow this Author
- View potential author matches

- H-index: 59
- Documents by author: 818
- Analyze author output
Additional information in paper

- **Source / Publisher**
  - *Journal* vs *Conference proceeding*
  - *High rank journal* vs *low rank journal*
  - *SCI (SCIE)* vs *non-SCI*
Experiences on reading papers

- Journal Club
  - A group of individuals who meet regularly to critically evaluate recent articles in the academic literature.

- help to be more familiar with the advanced literature in their new field of study
- help to improve the students' skills of understanding and debating current topics of active interest in their field
- help the people keep up with the literature produced by others who work in their field
Experiences on reading papers

Reading papers in different fields

- Not easy!
- Unfamiliar terminology/concept
- Different style of paper
- Different culture

“Well begun is half done.”
Experiences on reading papers

Reading paper = Practice for Writing paper
Thank you for your attention!