Career Seminar

session 6

Anastasia Bezerianos

TA: Eugenie Brasier

contact: **carreer.seminar@gmail.com**

https://www.lri.fr/~anab/teaching/CareerSeminar/

Homework Assignments

#2 Notebook

Assignment #2: Start a research notebook

Due: Every week

Create your personal research notebook
- Choose paper, electronic or hybrid

Continue for the rest of the semester …
- Keep track of what you read
- Sketch and record ideas
- DATE every entry
- Add KEYWORDS to every entry

Abstract

Summarizes the paper:

- Include the problem and solution
- Emphasize the contribution

1st sentence:

- What is the problem?

Next sentences:

- What did you do?: system, algorithm, study
- Key details to explain 1st sentence

Final sentence:

- Main results or claim

Write an Abstract

Pick a new *research* article
Skim, then read the paper

Answer the following questions:
- What specific problem does the paper address?
- What research methods did they use?
  (interviews? observation? field study? experiment? design a system?
- What were their results?

Write your own abstract, based on what you read
DO NOT copy their abstract

Writing Walkthrough: Procedure

Create a group of authors:

4 people, 20 minutes each = 1 hour 20 minutes

Preparation:

Copy selected document parts (max. 1 page)

Procedure per author

05 min: Everyone reads and annotes text

15 min: Start with sentence one:

proceed line by line: identify problems

Writing Walkthrough: Rules

Constructive criticism:

- Be positive
- Grammatical errors
- Logic errors
- "I did not understand this"

Do not debate: it wastes time!

- Participants identify problems
  - and suggest solutions
- Authors can accept solutions
  - … or not!

Structuring Research Articles and Master's Internship Reports

How to structure research paper?

NOT:

What I did, in chronological order

WHY NOT?

Because nobody cares :)

You are no longer a student who gets points for doing the exercise

You only get credit if you have an interesting, well-justified result

How to structure research paper?

NOT:

What I did, in chronological order

INSTEAD:

Find a 'hook': What is your claim?
What will attract the reader's attention?
What will the reader remember?
What is the citable result (one phrase)?

Writing is a highly iterative process

Different writing approaches:

Outline first, fill in the paragraphs

or

Work from notes to construct

or

Focus on the 'flow' of the ideas

Writing is a highly iterative process

Write, edit, read, write, edit, read …

Iterate at each level:

Sections:	Coherent structure	(mostly standard)
Paragraphs:	Coherent arguments	
Sentences:	Grammar, style	
Words:	Spelling, word choice	

Process suggestions

Write the easiest parts first:

Write a draft before you have results

Copy standard formats from your field

math ≠ engineering ≠ computer science ≠ HCI or DS

Find an excellent, similar paper to use as a guide:

What methods do they use?

How do they make their arguments?

Careful: DO NOT COPY their exact words

but learn from how they structure and express ideas

Process suggestions

Keep revising the abstract:
- beginning, middle, end

Link your introduction to your conclusion
- one unified story: problem → solution

Ensure that readers understand your contribution
- Make a claim and justify it

A ‘standard’ paper / research report

Title:	Summary of contribution
Abstract:	Summary of problem & solution
Intro:	What is the problem?
Lit review:	What other research is relevant? Why is it insufficient?
Body:	What did you do? Details on what, how & why
Results:	What did you discover?
Conclusion:	Why it is important?

Skim test: How will others read your paper?

Read the abstract and check the video:

- Is it worth continuing?

If yes:

- Read the abstract
- Read the beginning of the introduction
- Check the last 'structure' paragraph
- Look at the figures and captions
- Read the conclusion
- Check the references

Would your paper pass?

Abstract

Provides a concise summary of paper' contributions
it is NOT an introduction!

Readers:	(0st:	You, when still working on paper)
	1st:	Reviewers (!!)
	2nd:	Non-specialists who won't read paper
	3rd:	Ph.D. students writing a literature review
	4th:	Specialists (maybe)

Goal: Get others to read the paper
Help others cite your paper
Distribute your findings more widely

Abstract

Summarizes the paper:

- Include the problem and solution
- Emphasize the contribution

1st sentence:

- What is the problem?

Next sentences:

- What did you do?: system, algorithm, study
- Key details to explain 1st sentence

Final sentence:

- Main results or claim

Introduction

Structure:

- General problem area
- Specific problem area addressed by paper
- Literature review:
  - Who else has this problem?
- Your approach to solving the problem
  - But NOT all results!

Optional: Summary of paper structure

Introduction: Try this

1. Write an introduction
2. Throw away the first paragraph
3. Analyse what is left:
    - What are the topic sentences?
    - Do the sentences follow the topic sentence?
    - Do they constitute a cohesive argument?
4. Rewrite the introduction
    - Think about the flow of the argument
    - Who do you need to convince?

Introduction: Argumentation strategies

System XYZ is a great idea,
    but does not work in our context because …
Users XYZ need to do ABC
    but cannot because …
Algorithm XYZ is not sufficiently
    fast, robust, accessible …
Changes in technology (WWW, data, scale)
    require us to …

Where should you put the key finding?

Depends upon the discipline
- Psychology (CHI) tradition:
  - Not necessarily in the introduction
    - (but it happens more & more)
- Engineering (UIST/SIGGRAPH) tradition:
  - Always on the front page
- DataScience?

Why?
- Science: justify your process before results
- Engineering: show me what's 'new' first

BUT – key results are ALWAYS in the abstract

Literature Review

Analyze the literature
- Do NOT make a 'laundry list' !!!

Choose relevant references (to your problem):
- Address related problems, not this one
- Tried but failed to solve this problem

Critique the articles … but do it carefully
- Remember: You are critiquing your reviewers !
  - Avoid 'straw men' and over generalizations
- Brief description of what they did*
- Explain how they relate to your work

* How will others cite your paper?

Body of paper

This is your specialty, what you know best !!!

General suggestions:

- Follow the standard format
  - Do not be creative here!
- Make sure you present/justify your work process
- Do not intermix argumentation and technical description:
  - Keep to the point
  - Focus on clarity

Conclusion: Structure

First: summarize the paper

- Match the problem (introduction) to the solution
- Concise summary of what you did

Next: examine the contribution

- What are the main contributions of the paper?
- What are the limitations of the work?
- What are the implications for future research?
- (parts of these can be in a different section, e.g., Discussion)

Conclusion (from a reader's perspective)

Reviewers (of paper or internship) ask:

- Does it match the introduction?
- Does it summarize the paper?
- Are the claims clear and justified?
- What is the future of this research?

Readers ask:

- What are the final results?
- Do I believe the author's claims?

Rewriting

As you write and revise,
    the paper evolves … often dramatically

Sometimes the goal of the paper changes,
    or the problem being addressed,
    or you discover other contributions
Sometimes it should be two papers

You should be learning as you write,
    discovering what you think
    If not, something is wrong

Tell a story

A good paper has a rhythm
- a beginning, a middle and an end

Lead readers to draw their own conclusions
- do not use adjectives to force strong claims
- (Not: 'this is a powerful system')

> "It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material."
>
> Watson and Crick (1953)

Common Writing Errors

Common writing errors

This **allows to** …	This **allows us to** … This **allows users to** …
We wrote **a software**.	We wrote **software**. We wrote **a program**.
A French did XYZ …	**A French person** did XYZ …
The study ran **since** 2 years	The study ran **for** 2 years
We are 3 to work on this project.	**Three people** worked on this project.
A **32 years** old man	A **32-year** old man
Consists **in**	Consists **of** (usually)

Bold statements

Use "we" to convert to active voice:

This paper presents an investigation of .... We investigate …

Shorten it

In this paper, we describe .... We describe …

Two evaluation studies were carried out.

In the first one .... The first study …

Use simple past tense:

We have investigated how We investigated how

Avoid these

It exists many informations on **...**

It is a very important problem today …

Many researches exist **...**

There is a wide array of formulas used to measure X …

This paper describes a prototype that aims to provide a more efficient and effective tool that …

We describe an approach for organizing information…

More writing errors

We did a terrible mistake.	We made a mistake.
What means 'enigmatic'?	What does "enigmatic" mean?
We make research in this domaine.	We do research ... Our research in the field of …
We are not agree with you.	We do not agree We disagree
The user is not use to ...	The user is not used to …
We will present you …	We will present …

More writing errors

The number increase of 10%,	increases by 10%
We will eventually have recourse to action	We must act.
He did many progresses in his job	He progressed
We asked to the users ...	We asked users
We still ignore if xxx will happen.	We still do not know if xxx will happen.

Common writing errors

commercialized since 2007	commercialized as of 2007
several ones are	several are
general used approach	common approach
make benefit	take advantage of
He was professor	He was a Professor

Collective nouns

Use:

- information
- research
- work
- software
  - (the program)

Avoid:

- informations
- researches
- works
- softwares

Non-countable vs countable nouns

- much information vs. many techniques
- less data vs. fewer errors

Common errors

Hyphens

the state of the art	noun
a state-of-the-art technique	adjective

Singular	Plural
formula	formuli
datum (rare)	data
focus	foci (rare)

Writing numbers

one, two, three … ten — write as text
11, 12, 13 … — write as a numeral
1.7 — never: one point seven

North America
- 1.7
- 1,233
- $ 4.99

Europe
- 1,7
- 1 233
- 4,99 €

Faux amis

important contracts	major contracts
we are **actually** doing x	we are currently doing x
pass an exam	take an exam

Careful: a **proposed** project does not exist!

Others:

- Lecture
- Figure
- Eventually
- Comprehensive

Spelling

British	American
Organisation	Organization
Categorise	Categorize
Whilst	While
Colour	Color
Artefact	Artifact
Ph.D. defense	Ph.D. defence

… or pretend to be Canadian and mix the two!