# How to Read and Present a Scientific Paper *=[

Brian Nielsen.

Thanks to Emmanuel Fleury for providing his slides.

Aalborg University

# Part I:

# Reading a Scientific Paper

# Motivations

## Why to Read Scientific Papers?

[Academic World]

I read papers because of:

- The Content:

  Looking for new ideas or new techniques to write a new paper

- The Topic:

  What are the new directions in my field or learning a new topic

- The Authors:

  Looking for valuable colleagues to work with or new comers

# Motivations

## Why to Read Scientific Papers?

[Company World]

I read papers because of:

- The Content:

  I need the most efficient algorithm or new techniques for my product

- The Topic:

  Can I get a new product out of these crazy scientists work?

- The Authors:

  Who are the valuable persons to hire or collaborate with?

# Motivations

What should I learn?
I already know how to read English!

## It is cryptic

(notations, terminology, math formulas, information dense, references to other papers, . . . )

## It is hidden

(where to find good papers?)

## It is complex

(theorems, proofs, algorithms, experiments, . . . )

# Plan

1. Taxonomy of Scientific Papers
2. Structure of Scientific Papers
3. First Read Through
4. In Depth Reading
5. Looking at References
6. Evaluating Scientific Papers

# Taxonomy of Scientific Papers

**Trust**

− Research Reports

Workshop Papers

Conference Papers

\+ Journal Papers

# Taxonomy of Scientific Papers

## Research Reports

Review: None

Goal: Stamp an idea before publishing

Size: Depends

Freshness: Instantaneous

## Workshop Papers

Review: Yes, but low threshold

Goal: Either submit "*in progress*" work and hoping for feedback, or the paper has been rejected to a conference

Size: Few pages (from 5 to 15)

Freshness: From few weeks to few months

# Taxonomy of Scientific Papers

## Conference Papers

Review: Yes, the threshold depends on the conference

Goal: Publish a finished work with possible forthcoming research

Size: More than 8 pages and less than 20

Freshness: Few months

## Journal Papers

Review: Yes, the threshold depends on the journal (international experts are reviewing)

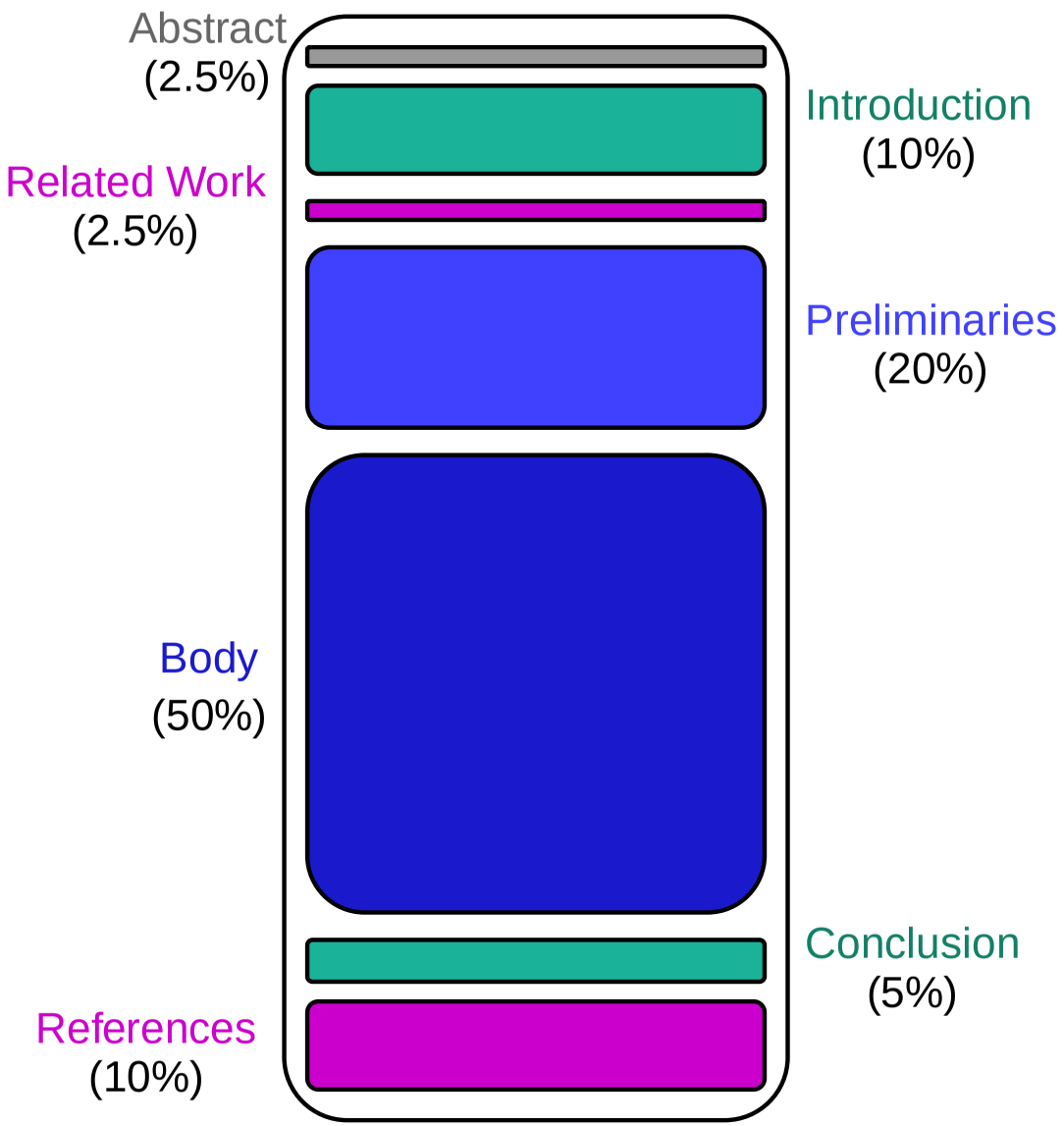
Goal: Survey or complete work on a topic (in depth paper)

Size : From 15 pages up to 70 (or more)

Freshness: Few months to few years

Ranking of outlets: by acceptance rate, by citation rate, by reputation

# Structure of Scientific Papers



# First Read Through (Step 1)

1. Read:
   - Abstract
   - Introduction
   - Related Work
   - Conclusion
   - References (Only the one pointed in one of the previous sections)
2. Reply to the following questions:
   - **For which community is the paper written?** [Introduction, Related Work]
   - **What contributions are in this paper (according to the authors)?** [Abstract, Introduction, Conclusion]
   - **What possible consequences can the contributions have?** (direct applications, new techniques, new fields,. . . ) [Introduction]

# First Read Through (Step 2)

1. Read:
   - Preliminaries (Identify the notations, theories or analysis methods)
   - Body (Warning ! Do **NOT** read the proofs or experiment settings)

2. Reply to the following questions:
   - **If I assume the proofs correct or the experimental setting and the analysis method relevant, does the authors meet the list of contribution?**
     [Preliminaries, Body]
     - **Yes**: Go to "In Depth Reading"
     - **No**: Try again or ask for advice by your supervisor

# In Depth Reading

1. Read:
   - Body (Everything)
   - References (Quick glance to external theorems/experiments)
2. Last Tips:
   - **A proof/experiment is too technical, I do not understand it!**
     - Is it relevant to understand it?

       Yes: Try harder, read background material, or contact your advisor

       No: Skip it
   - **I found an error !**
     - Are you sure?
       - Double check
       - Triple check
       - Ask your advisor
     - Are the contributions of the paper still valid?

       Yes: Then, it is not so important

       No: Write a paper!

# Looking at References

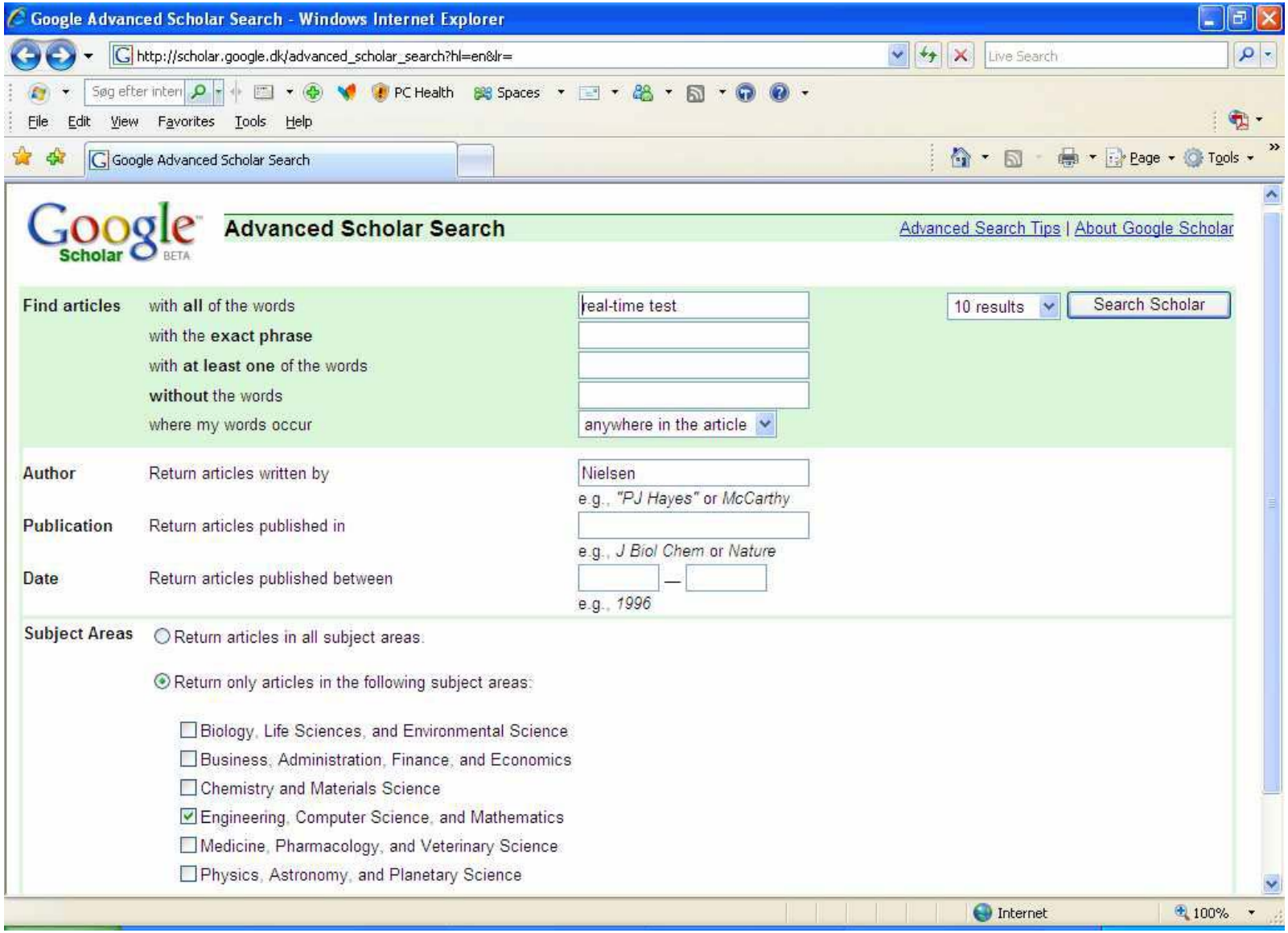
A paper is just one link in a chain !

Don’t stop once you have read it, it’s only the beginning !

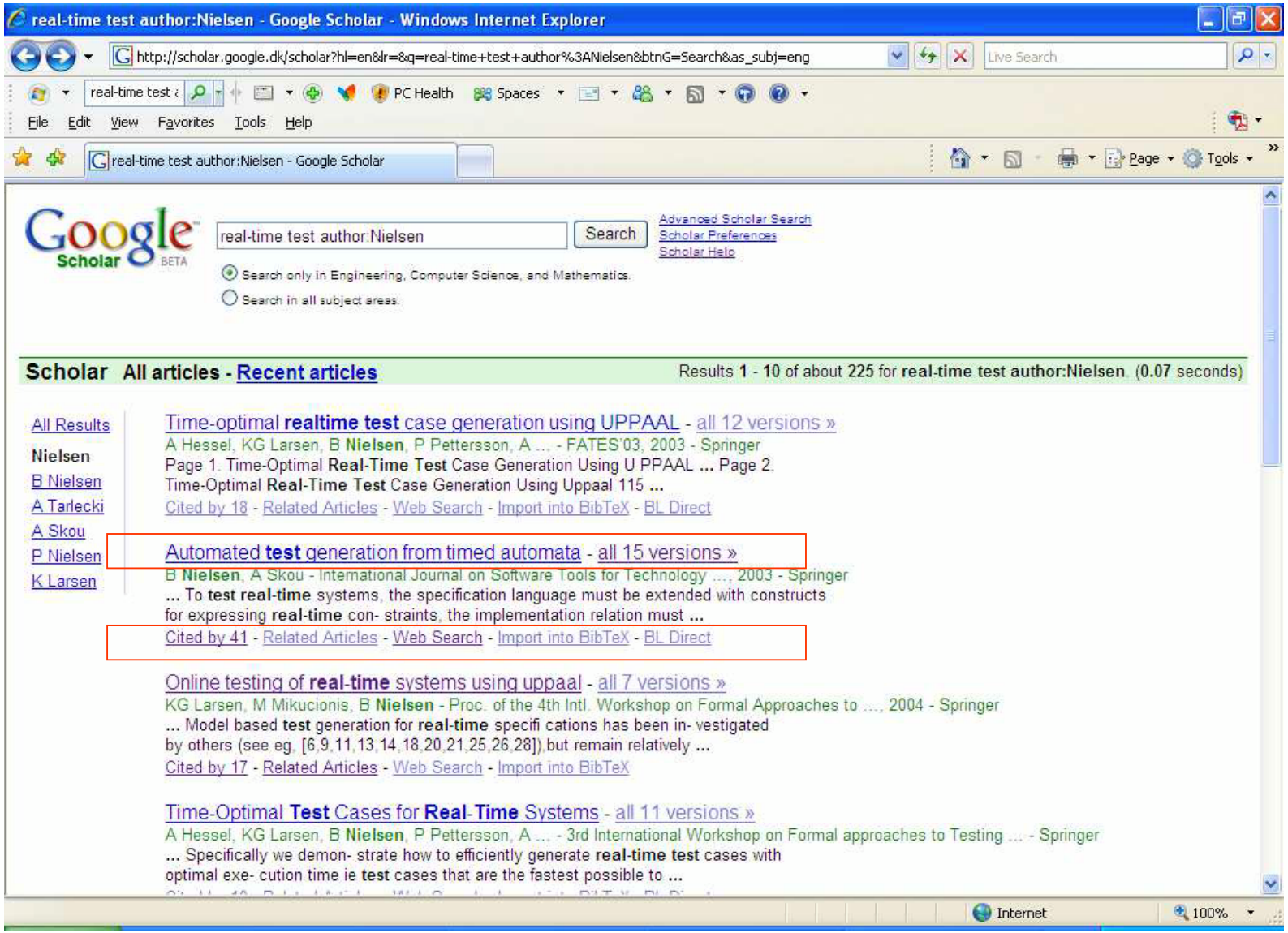
**Looking at references allows you to:**

- Discover the community around it
- Understand the context
- Put the paper in perspective
- Link it with other fields/topics

# Google Scholar – Tools for You



# Google Scholar – Tools for You



# Google Scholar – Tools for You

Larsen: Online testing of real-time systems using uppaal - Google Scholar - Windows Internet Explorer

http://scholar.google.dk/scholar?hl=en&lr=&cites=15355031087487652559

Google Scholar BETA

Search

Advanced Scholar Search
Scholar Preferences
Scholar Help

**Scholar** Results **1** - **10** of about **17** citing Larsen: Online testing of real-time systems using uppaal. (**0.09** seconds)

**All Results**
K Larsen
M Mikucionis
B Nielsen
A Skou
L Briones

Testing real-time embedded software using UPPAAL-TRON: an industrial case study - all 2 versions »
KG Larsen, M Mikucionis, B Nielsen, A Skou - Proceedings of the 5th ACM international conference on ..., 2005 - portal.acm.org
ABSTRACT U PPAAL -TRON is a new tool for model based online black-box conformance testing of real-time embedded systems specified as timed automata. In this paper we present our experiences in apply- ing our tool and ...
Cited by 8 - Related Articles - Web Search - Import into BibTeX

Online Testing of Real-time Systems using Uppaal: Status and Future Work - all 2 versions »
K Larsen, M Mikucionis, B Nielsen - Dagstuhl Seminar Proceedings - drops.dagstuhl.de
Abstract. We present the development of TU PPAAL — a new tool for online black-box testing of real-time embedded systems from non-deterministic timed automata specifica- tions. It is based on a sound and complete randomized ...
Cited by 2 - Related Articles - View as HTML - Web Search - Import into BibTeX

Random testing of interrupt-driven software - all 4 versions »
J Regehr - Proceedings of the 5th ACM international conference on ..., 2005 - portal.acm.org
ABSTRACT Interrupt-driven embedded software is hard to thoroughly test since it usually contains a very large number of exe- cutable paths. Developers can test more of these paths us- ing random interrupt testing—firing random ...
Cited by 2 - Related Articles - Web Search - Import into BibTeX

Interface Input/Output Automata: Splitting Assumptions from Guarantees - all 4 versions »
KG Larsen, U Nyman, A Wąsowski - Hermanns et al.[6] - vbn.aau.dk
There are two main contributions of the work. First, we explicitly separate as- sumptions from guarantees, increasing the modeling power of the specification lan- guage and demonstrating an interesting relation between blocking and ...

# Google Scholar – Tools for You

SpringerLink - Journal Article - Windows Internet Explorer

http://www.springerlink.com/content/7682n0kgglrkmn0d/

File Edit View Favorites Tools Help

SpringerLink - Journal Article

Content Types Subject Collections English

SpringerLink

Athens Authentication Point

**Welcome!**

To use the personalized features of this site, please **log in** or **register**.

If you have forgotten your username or password, we can **help**.

**My SpringerLink**

Marked Items

Alerts

Order History

**Saved Items**

All

Favorites

The International information industry awards 2006 WINNER Best STM Information Product

Journal Article

Automated test generation from timed automata

| | |
|---|---|
| Journal | International Journal on Software Tools for Technology Transfer (STTT) |
| Publisher | Springer Berlin / Heidelberg |
| ISSN | 1433-2779 (Print) 1433-2787 (Online) |
| Issue | Volume 5, Number 1 / November, 2003 |
| Category | Special section on trends in verification and validation |
| DOI | 10.1007/s10009-002-0094-1 |
| Pages | 59-77 |
| Subject Collection | Computer Science |
| SpringerLink Date | Thursday, February 19, 2004 |

**Add to marked items**

Add to saved items

Request Permissions

Recommend this article

Driven Design Using Business Patterns

Brian Nielsen[1] and Arne Skou[1]

(1) Department of Computer Science, Aalborg University, Fredrik Bajersvej 7E, 9220 Aalborg, Denmark

**Published online:** 17 June 2003

**Abstract** Testing is the most dominant validation activity used by industry today, and there is an urgent need for improving its effectiveness, both with respect to the time and resources for test generation and execution, and

**Find** more options

Go

Within all content

Within this journal

Within this issue

**Export this article**

Export this article as RIS | Text

**Text**

**PDF**

The size of this document is 573 kilobytes. Although it may be a

Internet 100%

# Evaluating Scientific Papers

**Ok, I have**:

- Read the paper,
- Understood it,
- Browsed the references.

# What's next?

- List the strength/weakness of the paper (be critical!)
- Define the contributions of the paper (look at the papers quoting it)
- Put the paper in perspective (impact on the community)
- Make your own opinion! (very important)

# Summary: How to Read a Paper?

1. **First Read Through**

   (Abstract, Introduction, Related Work, Conclusion, References)

   Extract the context and the intended contributions

2. **In Depth Reading**

   (Preliminaries, Body, References)

   Grab the details

3. **Looking at References**

   (References, Google Scholar)

   Make the link with other papers, look at the real impact

4. **Evaluate the Paper**

   (Everything)

   Make your own opinion

5. **Start to Prepare your Presentation**

# Part II:

# Presenting a Scientific Paper

# Plan

1. Before You Start
2. Organize your Ideas
   - Introduction
   - Preliminaries
   - Body
   - Technicalities
   - Conclusion
3. Slides
4. Speaking
5. The “Show”
6. Last Tips

# Before You Start

- **Know your Topic**

  (Be sure you have understood the paper)

- **Know Your Audience**

  (Your talk must take the audience into account)

- **Know Your Goals**

  (What are the expectations of the audience?)

- **Know Your Limits**

  (how much time will be needed?)

# Organize Your Ideas (1/3)

- **Identify the Key Ideas**

  (Make sure that all the key ideas of the paper are in your talk)

- **Do not Go into too Many Details**

  (Ignore the superfluous and focus on the essentials, use examples!)

- **Use A Top-Down Approach**

  (starting wide, finishing narrow)

- **Structure Your Talk**

  Introduction, Preliminaries, Body, Technicalities, Conclusion)

# Organize Your Ideas (2/3)

## Introduction

- Define the Problem
- Motivate the Audience
- Discuss Earlier/Posterior Work (briefly)
- Emphase the Contribution of the Paper
- Provide a Road-map

## Preliminaries

- Introduce Terminology and Notations or the Setting of the Experiment (but only the absolutely necessary ones)
- If Needed, Redefine the Problem more Technically

# Organize Your Ideas (3/3)

## Body

- List Major Results
- Explain the Meaning of the Results
- Give some Examples

## Technicalities

- Proof sketch, algorithm, implementation details, experimental results

## Conclusion

- Remind the Main Results
- Explain Your Opinions on the Paper
- Indicate that Your Talk is Over

# Slides

- **Use them: computerized, printed or handwritten slides**
- **The Simpler, the Better!**

  (do not put the whole sentences you want to say on slides)

- **Use Colors!**

  (but don't exaggerate !)

- **Use Pictures**

  (one picture is worth thousands of words)

- **One Slide = 1–3 minutes (average)**

  (think about timing)

# Speaking

- **Speak Slowly, Steadily and Loud**

  (do not speak mentally, something to drink, avoid bubbles)

- **Find the Right Words**

  (prepare some full sentences to say during the talk)

- **Transitions are the Keys**

  (prepare transition between slides)

- **Improvisation is Needed**

  (whatever you do, you will have to improvise)

- **Humour is OK but not Recommended**

  (do not try to be funny!)

# The Show

- **Do not be monotonous**

  (try to make your voice vary slightly)

- **Make the Audience Participate**

  (depends on the type of talk)

- **Maintain Eye Contact**

  (don't show them your back)

- **Control Your Position**

  (don't hide the slides)

- **Control Your Timing**

  (do not forget the time)

- **I made a Mitsake... The Show Must Go On**

# Last Tips

Practice!

Practice !

Practice !

Practice !

**Practice !**