Preparing Slides
and giving
an *excellent* academic talk

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Clearly, while some people are born with a gift of excellent communication skills, for the rest of us, giving a good talk requires some experience and **a lot** of preparation.

A note to academic advisers: Even though we teach our students how to do research, we rarely provide them guidance on how to *present* it.

Giving a Good Talk

The goal of these slides is to provide some tips, advice and guidelines on how to

- prepare your presentation
- prepare for your talk
- give an excellent talk

This document is work in progress.

Comments and suggestions are most welcome !

      drop me an email to boaz.nadler@weizmann.ac.il

Preparation

For most of us mortals, giving a good or excellent talk does not come easy. It requires hours if not days of *preparation*.

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Important things to consider *before* preparing your talk:

- what is the *purpose* of your talk
- who is the expected *audience*, their background, assumed knowledge.
- how much *time* is your talk

Purpose of talk

Communicate your ideas.

Emphasize more on the main challenges, concepts and ideas, less on the very technical details.

Think:

what is the main message of your talk ?

what is the problem you considered ?

why is the problem (or the solution) interesting ?

Hint: Do not attempt to present all the results of your 7 latest papers in one talk !

Don't be Lazy !

Most of us have worked for several months if not years, on formulating a problem, solving it, writing a paper and eventually publishing it. So, it is reasonable to spend at least a few DAYS summarizing this in a well polished and professional presentation.

If you did an excellent research, then you'll probably present (variants) of this talk multiple times at several places.

Key Message: *Preparation is well worth the effort.*

Don't be lazy !

At a conference/workshop/seminar between 10 to 100 other researchers will be listening to your talk, and spending their precious time paying attention to you.

This is a one-time opportunity. A good talk can lead people to read your paper, follow your work, invite you to future collaborations, etc.

Some Key Ingredients:

A good set of slides typically clearly states and explains the following:

What is the problem you solved / formulated ?

Why is it interesting ?

What is (high-level description) of previous work on subject ?

What is *your* contribution (is it a new approach, a new analysis of previous methods, a contradiction to previous results, a significant improvement of an earlier result, etc) ?

What are *insights* and/or take home messages from your work ?

Scope

Many good talks have a double funnel structure.

- Start wide: broad overview of field, its importance, noteworthy previous works.

- Narrow focus on specific problem of your own work and its solution.

- Make sure to clearly explain your problem setting, its assumptions, its input, desired output. Explicitly state the question(s) you are considering !

- End wide: broad applicability of your findings / potential future extensions of your technique, other problems where it may be applicable etc.

Time

The time given to your talk typically depends on the venue.

In conferences, talks are typically between 15 to 45 minutes.

Department seminar talks are typically longer, between 50 minutes to 1 hour. Some seminars are 2 hours long.

DO NOT GO OVERTIME !!!

Rule of Thumb: Number of Slides $<$ Number of Minutes .

- Choose a clear short and informative title.

Don't forget to acknowledge your collaborators !

Checklist: Things to avoid

Do some of your slides contain:

- too many words ?
- too much mathematical / technical detail ?
- figures with fonts too small ?
- figures with too much detail ?
- graphs with no clear x and y labels ?
- tables with lots of numbers ?

Does your presentation contain:

- too many slides ?
- too many messages in one talk ?
- too many acronyms, definitions, subscripts, etc ?
- English typos ?

Color / Centerline / Bold

Each slide should have one (and only one) clear purpose.

In addition, you may wish to use various visual queues to help the reader focus on this purpose.

Examples:
Some use color to emphasize an important point / concept in a slide.

   centered lines can emphasize a key conclusion / question etc.

Bold text may emphasize key topics (e.g. **Theorem:**).

Do not:
- use too many colors in one slide
- use colors that are difficult to make out (e.g., yellow on white background).
- use non-white background (makes it difficult to read text).

Figures

They say a picture is worth a thousand words

yes, BUT

when the picture is in *focus*.

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<div align="center">yes, BUT</div>

when the picture is in *focus*.

When presenting a figure:
- is it really clear ?
- is there a simple conclusion / take home message from it ?
- does it correspond to the ideas in your talk / previous slides ?
- are the x and y axis clearly marked ?
- are the fonts readable (or were you lazy and took the figure from the paper, with tiny fonts...) ?
- Are the lines and symbols easily viewed from far ?
- Does it introduce irrelevant / confusing issues ?

Figures

To make fontsize larger and viewable consider the following in Matlab:

```
figure(20);
set(gca,'fontsize', 24);
```

For legends that contain latex symbols consider the following

```
h = legend(....);
set(h,'interpreter','latex');
set(h,'fontsize',24);
```

Clearly viewable lines:

```
plot(x,y,'b-','linewidth',2);
```
For a nice script that does some of this for you, download customizePlot.m from my website [Thanks to Tal Amir !]

Practice

Give the talk in your office, talk aloud, see that slides connect one to each other, that the presentation flows fluently.

Give the talk in front of your friends. Give a practice talk at your research group.

Do not speak in a monotonic voice (unless you want your audience to fall asleep...)

Show *enthusiasm* and excitement about your work. It will be viral.

If you are not a native English speaker, prepare in advance words or even sentences that you want to use in your talk. Write them down.

The Big Day of your Talk

The day of your talk has finally come :) Be prepared for it.

Arrive to the lecture hall at least 15 minutes *before* your talk, setup your computer well in advance, make sure everything works.

As a backup, have your presentation also on a USB stick, should the unexpected occur.

Use the blackboard to write a specific example, illustrate something not on your slides,

The Big Day of your Talk

When someone from the audience asks a question, consider repeating it outloud for others to hear. This can also give you more time to think about your reply. You can also use the blackboard to illustrate your answer.

Throughout your talk, make eye contact with the audience !

Engage the audience in your talk - don't be afraid from a more active audience who may ask questions. You can also pose questions to the audience during your talk (Who thinks this statement is true? assuming you have an interesting counter-intuitive result).

Don't lose your audience, don't talk to yourself.

If using a laser pointer, don't move it all around and do not point it to the audience...

- *How to write a paper*, by Oded Goldreich,
http://www.wisdom.weizmann.ac.il/∼oded/writing.html

- *Giving an academic talk*, by Jonathan Shewchuk
http://www.cs.berkeley.edu/∼jrs/speaking.html

- Many additional links appear here:
http://www.samsi.info/forms-and-resources/postdocs