Lecture 20
Introduction to Project 4 and hints on how to give a good research talk

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1 Introduction

This lecture started with an introduction to Project 4, which will feature NXT [1] robots. We then resumed and concluded the discussion on `How To Write a Good Research Paper` before moving on to `How To Give a Good Research Talk` [6].

2 Project 4

The next project will be about `NXT` robots. The aim is to have two of them work together to lift a box and carry it as far as possible. The only rule is that both robots must participate in the carrying of the box. A short guide to the first steps to configuring and programming the robots can be found at [2]. Also, a guide to programming in NXC – which stands for `Not eXactly C` – is available at [3]. A tutorial can be downloaded from [4].

3 How To Write a Good Research Paper (cont.)

This continues and concludes the series of hints started in Lecture 18.

- *Basic stuff*
  - **Deadlines** Always submit your paper and reports by the deadline. This implies you should finish them earlier and have the time to correct them before the submission.
  - **Length Restrictions** Always respect the length restrictions. Most of the time, reviewers do not really want to read your paper, avoid annoying them before they even start reading. Furthermore, that which can be said in 11 pages, can also be said in ten.
- *Visual structure* Use some sort of visual structure to have the key elements stand out.
  - **Sections and subsections** A hierarchical organization of your paper makes transitions easier and facilitates continuity.
  - **Bullets** A list is easier to read if broken into bullet points.
  - **Italics and bold font** Keywords stand out better when typeset differently.
  - **Layout code** Any code you insert in your paper should be laid out in a specific and consistent structure.
- **Pictures** Some simple graphs can help make a point.
- **No passives** Try to avoid passive voice.

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4 How to Give a Good Research Talk

We will now present a list of simple hints for giving a good talk. In the coming weeks, each student will make a short presentation (̃ 10 minutes), as a practice.

One important idea to keep in mind is that research is about communication. The communication of discoveries is achieved by publication of papers, but to get your papers read, you should advertise for them. This is what talks are about: advertising for your papers.

- **Narrow and deep vs. wide and shallow** A good talk should only cover the key elements of your paper, but it should make them clear. Talks that are too generic and could serve to cover the basics of multiple papers have probably already been given, and do not serve the purpose of advertising for *your* paper.

- **Examples vs. detailed Theory** A good way too keep your talk simple while delving deeper into the subject is to provide examples. By finding a good example, you can provide a motivation for your paper and make various points about the theory without scaring people off with heavy mathematical formulae.

- **Speed of speech** Give the audiance time to digest the information you're giving them. Keep in mind that they probably haven't spent as much time on the subject as you have.

- **What to leave out?**
  - **Outline slides** If you spend too much time explaining what you are planning to do before you've really caught the audience's attention, you're likely never to get it. However, it might be good to give them an idea of how your talk is organized, so that they know where you're heading. But do so after the motivation for instance.
  - **Technical details** People can read the technical details in your paper. It is much better to provide them with a feel for your idea than trying to have them understand technicalities they don't see the point of.

- **Preparation** As opposed to a paper, which should be ready much before the deadline, a talk should be fresh in your mind when you give it. It is often best to prepare it the evening before you give it, or at least to refine and adapt it then.

- **LATEX?** Do not typeset your slides, unless you know you will be using your own laptop for the talk. It can happen that you have last minute changes to do to the talk or you might even want to edit it while you're presenting.

- **Appearence** Keep your slides light and readable. A white background keeps it simple and allows for the use of a standard colorset – *e.g.* blue, black and red.

- **Tone** Be enthusiastic about your talk, you will be more likely to awaken people's interest and curiosity.

References

[1] LEGO Mindstorm, NXT.
   http://mindstorms.lego.com/eng/Stockholm_dest/Default.aspx.

[2] First steps.
   http://mtc.epfl.ch/courses/ProblemSolving-2007/nxt.html.

[3] John Hansen, *NXC Programming Guide*.
   http://bricxcc.sourceforge.net/nbc/nxcdoc/NXC_Guide.pdf.

[4] Daniele Benedettelli, *NXC Tutorial*.
   http://bricxcc.sourceforge.net/nbc/nxcdoc/NXC_tutorial.pdf.

[5] A sample NXC program.
   http://mtc/courses/ProblemSolving-2008/data/avoid.nxc.

[6] Simon Peyton Jones, *How To Write a Good Research Paper and How To Give a Good Research Talk*,
   http://research.microsoft.com/~simonpj/papers/giving-a-talk/giving-a-talk.htm.