

Common Pitfalls

F20PA

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Based on slides by Dr. Christian Dondrup

Outline

- General advice
- Common pitfalls
- Conclusions
- Discussion



<https://medium.com/@maxdiffpro/mastering-maxdiff-4-common-pitfalls-and-how-to-avoid-them-dbf30ee85032>

What is this talk about?

- ➊ Honours projects are a lot of hard work, and your freedom implies also a freedom to go terribly wrong.
 - ➊ Most of you will be fine.
 - ➊ Yet by the laws of probability, a few of you won't.
- ➋ If by giving this talk I can head off disaster for even one or two of those few, then this talk will have been well worth while.

GENERAL ADVICE

Research

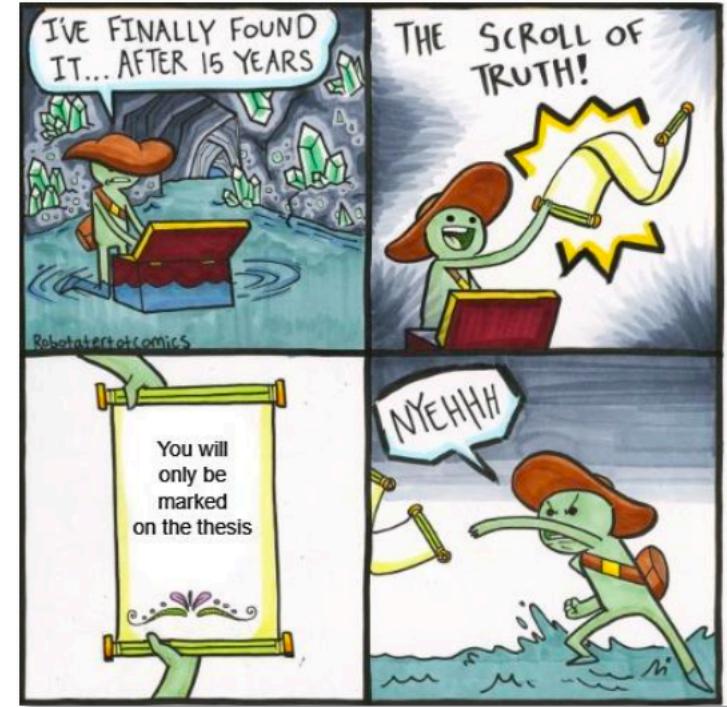
- So far, you have been told what, how, and when to do it.
 - This is your first experience of self-guided work
 - Scary (which is normal) but fun as well
- A thousand new and interesting ways to go wrong
 - Needs discipline to get through



THE UGLY TRUTH

The Ugly Truth

- You are marked on the dissertation.
 - Not the code.
 - Not the effort you put in getting things to work.
 - Not the libraries you had to hack to make it work.
 - ...
- Read and pay attention to the rubric! Your markers will.
 - There is no box in the marking rubric for 'Great programmer'.



The Ugly Truth

- You will spend hundreds of hours producing your dissertation.
 - Your marker will not put in equal effort.
- Understand that your dissertation will be read quickly & non-linearly.
 - Design it to support non-linear queries; e.g. pick a spot that your reader may land on: can you work backwards?
- Make sure to guide the reader through your thesis
 - Specific pointers (“We have seen / will see” → “We saw/will see in Subsection 4.1”).
 - Relate the current paragraph/section to what you wrote earlier (“To address the issue of..., this section gives an overview of related work.”)

The Ugly Truth

- You're the expert; your (2nd) marker isn't.
 - Significantly different from undergraduate experience thus far.
- Explain yourself.
 - Especially: if something that looks easy, isn't easy, then make sure to say so.
 - Does not include coding issues
 - Explain technical design decisions.
 - If I am reading a part of the thesis and have no idea why I am reading this, I won't be able to piece your work together.
 - Always guide the reader and make sure they understand how this specific paragraph fits into the overall picture

YOUR PROJECT/ SUPERVISOR AND THE THESIS

Supervisor telling
me to finish my thesis

Me playing video games as a
reward for having thought of a cool title



imgflip.com

Choosing the right Project/Supervisor

- Go with your gut for a supervisor. If you feel uncomfortable when you first meet a person, thing, or place – then chances are it will only get worse.
 - Don't be afraid to change your supervisor.
 - Might be a little late now but never too late if you're really unhappy
- Don't do a boring topic. Makes it harder to get out of bed.
 - The topic doesn't have to be original or new.
- You are responsible for your project, not your supervisor.

Managing your Supervisor

- Understand your supervisor's limitations.
 - imperfectly organised and forgetful, high demands on time.
- Make appointments and write e-mails in a professional manner.
 - Give your name, title of dissertation, when you last met, subject, etc.
 - E-mails should be self-contained.
 - Attach all necessary documents, give precise pointers: "page 60 of pdf attached, section on..."
 - Your supervisor will not have the time to read entire drafts of your report/thesis.
- You're asking your marker for marks, so you need to do the work.
 - Pester people for meetings and results.



The Document!!!!

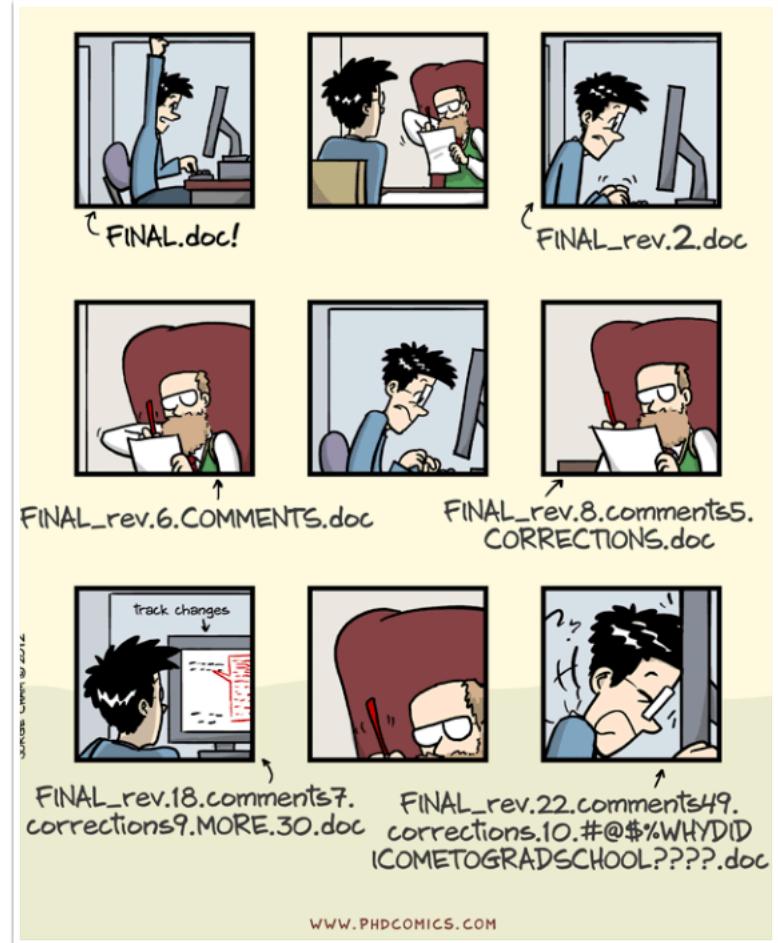
- Spell-check your thesis.
 - Beware last-minute ‘improvements’.
 - Sleep on the document.
- Abstract must be clear, memorably and concisely explain what you did and why.
 - Writing abstracts is difficult.
 - Use your first reader to refine this.
 - Spend time refining the essence of a project; helps with prioritisation.

The Document!!!!oneone

- Table of contents. Page numbers for reference.
- Informative section headings.
- Terminology must match up: call a spade a spade, not ‘spade’ in the abstract, ‘shovel’ in the section header, and ‘digging tool’ in the body of the text.
- No waffle. Delete ‘In order to’.
- Don’t be pretentious.
- Favour first person or passive (you did all the work, there is no “we” in “individual research”).
- 1 paragraph = 1 idea. Idea evident in first two lines of paragraph.
- Remember to tell the reader how all this connects

The Document!!!!111eleven

- Be self-critical and honest.
 - If you try to gloss over stuff your reader may notice.
 - Note: your marker is expert at seeing through non-sense. Don't even try.
- If first deliverable is poor, make sure to speak with second marker before submitting second deliverable.
- May be useful to invite second marker to look at parts of a draft
 - Demonstrates that you care; may transfer ownership of some errors.
 - Listen to the markers, and act on their suggestions, and be seen to act on these suggestions. If you don't act on them then write a short e-mail to explain why.



COMMON PITFALLS

Talk to People

- **Talk to your supervisor**
 - Agree on regular meetings and make sure they happen
 - Don't wait for the meeting to raise issues and problems
 - Frequently check your thesis and code
 - There are no stupid questions!
- **If you feel like you don't get the support you need, say it.**



Talk to People

- **Brainstorm ideas**
 - With friends or family
 - With the rubber duck

- **Don't compare yourself to your friends**
 - Everyone works at their
 - own pace
 - They might be lying
 - But be open to suggestion



Backup your work!!!!

- Regular backups of your code and thesis
 - Use version control
 - Google drive is not version control!
- Use university servers
 - Sharepoint for thesis
- Make several back ups
 - Do not keep them at the same physical location



Time Management

- **Do a little every day**
 - Do not rely on the deadline to motivate you
 - Everything will take at least 3-times as long as you think
- **Do not wait for results of your experiment**
 - Describe the experiment: Set-up; participants; hypotheses; etc.



Time Management

Have some “me-time”!

- Don't feel guilty about having time off
- Spend time alone or with friends
- Don't think about your project
- Go outside if you can! Remember your vitamin D

Sleep!

"There's no way you can work off just 4 hours sleep"

Me:

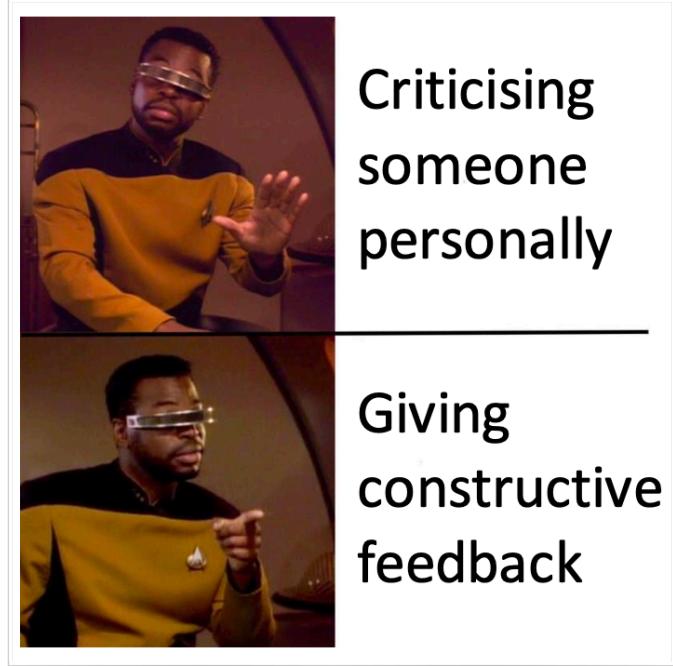


Managing Expectations

- **Don't make too many plans.**
 - Don't expect to complete everything.
- **Expect that you will not get the results you want.**
 - This does not mean that you will not get a degree.
 - Just means you have to explain why from a scientific POV. Not: "I didn't get it to work..."
- **Make sure you have a safe core to your project that you will be able to achieve no matter what.**

Managing Expectations

- ➊ Your project/thesis does not define you as a person!
 - ➊ Get over the idea that it has to be perfect
- ➋ It's not your baby, if someone critiques it, they are not criticising you as a person.
 - ➋ Give it to someone to read
 - ➋ Take on their advice (with a pinch of salt)



General Pitfalls

- Make sure you have access to a computer
 - Sounds simple enough, but: specialised software/hardware, OS, GPU, etc.
 - What happens if your laptop/PC breaks?

General Pitfalls

- **Software libraries**
 - Seem easy to use from description
 - Never as simple as you think
 - Might even require you to hack the library to make it work for your problem
 - Markers might have never used the library themselves
 - Assume that it will work off-the-shelf

General Pitfalls

Finagle's law

From Wikipedia, the free encyclopedia

Finagle's law of dynamic negatives (also known as **Melody's law** or **Finagle's corollary to Murphy's law**) is usually rendered as "Anything that can go wrong, will—at the worst possible moment."

The term "Finagle's law" was first used by [John W. Campbell Jr.](#), the influential editor of *Astounding Science Fiction* (later *Analog*). He used it frequently in his editorials for many years in the 1940s to 1960s,^[1] but it never came into general usage the way [Murphy's law](#) has.

Don't use Wikipedia as a source!

ChatGPT

- You might think: "Why do I need to do any work if I can just use ChatGPT?"
 - Your supervisor will know
 - You will have to talk about your work in an expo during which ChatGPT can't help you
 - You don't learn anything
 - ChatGPT is very good at making stuff up that sounds believable but is complete rubbish

Plagiarism

- Remember, your submission is checked for plagiarism
 - Web resources, other students' submissions, etc.
- If you get caught, you are in big trouble

CONCLUSIONS

Conclusions

- Manage time. Structure the work so if you run out of time you still have something.
 - Have a safe core to your project!
- Easier to dream up an overambitious project than to envisage a realistic one
 - but then harder to execute an overambitious project than a realistic one.
- If possible, do just one thing (one-and-a-half, max).
- Software libraries and their perils.

Conclusions

- You are not the hero, the research is.
 - Your marker will be all too familiar with how difficult research is.
- If something that looks easy, isn't easy, then say so.
- You don't get marks for being a good programmer.
- You do get marks for telling a great story. People retain narratives.
- Typical structure of a dissertation: write a program, evaluate it, say why it isn't good enough, suggest future work.

Conclusions

- **Talk to someone when you have questions**
- **If your experiment fails, you will still get a degree if you write about it**
 - And it won't influence your marks if it wasn't your fault.
 - There might even be an interesting scientific finding hidden in the failure
- **Everyone has their own style of working**
- **Do a little every day**
- **Don't wait for anything, work on a different part instead**
- **Don't hesitate to ask for help**
 - After you have googled for the problem!

Conclusions

Allow yourself to be tired.

Take breaks.

Sleep.

Conclusions

Don't cheat, it never works. This is not a simple programming assignment anymore where you might have gotten away with it.

This project is supposed to be fun, so do it yourself and see how good you are.

Conclusions

MAKE BACKUPS!!!