Statement of Supervisory Expectations

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1 Introduction

The aim of this document is to provide potential future as well as newly starting Higher Degree by Research (HDR = PhD or Masters) students a comprehensive, yet concise overview of my view and style of research student supervision. Based on my experiences over the years, it is beneficial for both sides to be clear from the beginning about what expectations both have of each other, so as to have a fruitful working relationship over the duration of the research student’s studies and candidature. While I spell out what views and expectations I have of the supervisor - supervised student relationship, it is equally important that you as the student inform me of and discuss with me your views and expectations of this relationship.

Why is this important? In my opinion and experience, far too often potential future students and research supervisors rarely take the opportunity to meet – either in person or via Skype or phone – before the student arrives and enrols. That is even more true, but not limited to, for international students. Yet, we are all individual characters with our own particular ways of thinking, our own expectations, and our own skills and knowledge of what works for us. And sometimes that means two people are simply ‘ticking’ too differently and that the relationship is simply not working, which ends up being stressful and often disastrous for anyone involved. I want to avoid that and, hence, this document is meant to be a starting point that triggers these discussions before and when the student starts, rather than leaving this to chance and finding out half way through the degree that the chemistry between the us is not right.

2 Rationale

I have already briefly eluded to some of the reasoning behind this document but would like to add the following. I have seen it in both my own experience as a PhD student and supervisor as well as that of my colleagues at various institutions that far too often the selection of a supervisor by the student is based primarily on the reputation (‘big name’) of the supervisor and the selection of the student by the supervisor is based on the grades achieved in prior studies and perhaps some already existing research publications that the student has (co-)authored. A factor that often gets completely neglected is that of getting to know the applicant / candidate beforehand (and vice versa). I believe this is a very important component for a successful relationship and I will try whatever means are possible to communicate as much as possible with you. Ideally, that would mean to meet you face to face but unless the you are already in Australia or going to the same international conferences as me, it is often unlikely. In that case, communication by Skype, phone and/or email will be essential to discuss our expectations and views for a successful student - supervisor relationship.
3 Selection of Research Project Topic

The selection of a topic is no mean feat. First of all, the topic has to be related to one of my research interests (see my homepage). There are undoubtedly many interesting topics around but if it is not in an area that I can provide expertise in, then I am not the right person. Secondly, I believe strongly that students must choose a topic that really interests them, particularly for PhD studies. 3-4 years is a long time and require a lot of commitment from you to work on a single project. Invariably, there comes a time when things seemingly do not work out, when you try new idea after new idea, yet nothing seems to work, when you are stuck for weeks or even months, when you need to backtrack again and again and try yet another idea. This is a very testing and frustrating process for anyone, but in my experience almost everybody goes through it. If you were then working on a project that does not really interest you, it is very difficult to find the motivation to pull through. Hence, the choice of topic is very important.

When choosing a topic, students fall into one of the following two categories (somewhat depending on where your funding comes from), which provide different degrees of freedom:

1. **Project-specific scholarship; Industry-funded scholarship.** Since the scholarship is specific to a particular project, you do not have the option to choose anything you want as a project topic, but rather it must be closely aligned with the project or is already pre-defined. There is usually still some room to move into different directions, but it is not a free choice. I expect you to respect these boundaries and to work within them.

2. **Scholarship from the University or Government; Self-funded.** To some extent, this provides a greater amount of freedom than the above because of the more general nature of the funding, so the important factor here is that there is a clear agreement between you and me as to the field in which the intended research will take place and what the intended project directions are. I expect that we discuss this well before the studies, in fact to a large extent at the time of application (or even earlier).

While no topic is ever set in stone and cannot be altered if things do not work out, this should be the exception, not the norm, and be based on good reasons. I expect that students wishing to change their topic articulate clearly why they wish to change and what new direction is proposed. If the scope and my own expertise allow, I have no problem to continue providing supervision. If not, I will suggest to find an alternative supervisor who is better equipped in the new direction. My expectation is that you think carefully about committing to a project before you agree to work with me.

4 Supervisory Panel

I think almost all Australian universities these days use supervisory panels instead of single supervisors. I strongly believe that is a good idea and adds to the perspectives that a student experiences. With that in mind, I always try to set the initial panels up in such a way that all members are active in the student’s supervision, not just a name on paper.

As the research studies are ultimately the student’s responsibility – Me: "I already have a PhD. I am not looking for another one. This is your degree and you need to take charge of it, with guidance from the supervisory panel.” – I expect you to come and talk to me if you feel that the supervisory panel is not working for you and that you would like other researchers on it. That includes the option of replacing myself (although I hope it will not come to that!). It’s your degree, so you must align everything possible to give you the best chance to succeed! While we are here to give you guidance and mentoring, using our expertise, the relationship evolves of the duration of your candidature with you taking more and more responsibilities. We expect you to be more of an expert in your chosen topic than we are by the end of the studies.
5 Regular Meetings and Communication

In the old days, when a PhD could take 5, 6 or 7 years, a student could explore any area they wished in the initial years. However, with the limited time of typically 3 years these days, maybe with 6 months extension (at most 12 months), a research student project must be well managed from the start. There are good reasons why the Australian Government calls it the Research Training Scheme (RTS) – it is about training you in how to do independent, original research. It is not about solving the world’s problems, nor is it about winning a Nobel Prize.

Students studying under my supervision are expected to make themselves available for weekly, hour-long individual meetings as well a weekly group meeting. I like to hold these at set times, so that we all know when we will meet and do not have to find a time ad hoc. If nothing urgent or new needs to be discussed, we can then always still cancel a particular meeting in a particular week, but overall the meeting time is a ‘standing booking’ in our calendars. While we talk about general news, upcoming deadlines, interesting papers, sharing of code (i.e. let’s not reinvent the wheel!) etc. in the group meeting, we will go into the strategic planning, specific discussions, technical details and anything specifically concerning the your project in the individual meeting. In particular in the early stages of the project, I expect you to make every effort to (a) be available for the meetings and (b) be prepared for them. The latter can be in written form, i.e. a written summary of papers you have been reading, a draft literature review, paper, chapter etc., or it can be in oral form as a report of what the you have been working on in the last week, what the current situation is, how the project is travelling in the time plan, what problems might have come up, what ideas you have had and what the plan for the next week and coming weeks / months is.

Some students might feel that this is micro-managing their projects but it is my role as supervisor to ensure that all is done for your studies to succeed. As the studies progress and with proven experience, the weekly meetings might turn into fortnightly meetings, although I like to keep the weekly meeting booking standing so that it is always clear to you that you can meet me then, if you wish. You are of course also welcome to see me at other times, but must fit in with my normal schedule then, which means I may not always be able to meet you.

The group meetings are an important part of the weekly calendar as they help us to work as a team. These meetings are for staff and students alike. We all give a quick 2min update, share problems, experiences and solutions, discuss upcoming events, go through some recent or seminal papers of general interest and so on. You are expected to come to the group meetings, to come prepared and to participate actively.

I expect you to be flexible in your ways of communication. The preferred option for any communication outside meetings is by email, as I am often away from the office on external research projects or teaching duties. In urgent cases, you can ring me on my mobile. I will generally reply within 24h, often faster and expect the same from you.

6 Tools

With our research being in very technical areas, it will not come as a surprise that we use certain tools. While there is a plethora of available tools, software, algorithms, code and hardware out there, we commonly use certain tools, operating systems and programming languages in our group and all students are asked to respect these choices and adhere to them. There are two main reasons for these:

1. While every student’s research degree is awarded to the individual, I strongly believe that we achieve more if we work together as a group. To do that effectively, we need to use the same tools so that we can share code, software, algorithms, experiences etc.
2. There are certain ‘standards’ in the research community in our field and if one wants to get ones results published, one must adhere to these (perceived) standards. These are not set in stone and evolve, but choosing tools completely outside what the community considers as acceptable will decrease the chances of the publication being accepted.

The most common tools we use are

- All software we create must work cross-platform. We are not interested in platform-specific solutions. Our primary operating system platform is Linux/Unix (and with that Mac OS X, which is a variant of BSD Linux). If a student has a strong affinity to Windows OS then that is OK, as long as the software and algorithms they create are not platform-dependent.

- Prototyping and proof-of-concept studies can make use of Matlab, which is a great tool for these purposes.

- Algorithms / experiments that require heavy computation must be coded in the C++ programming language for efficiency reasons.

- We use open source tools whenever possible. For example, the OpenCV, VxL, and LibSVM libraries are widely used in the computer vision community. Equally, tools such as HTK and Praat are widely used in the speech community, and so on.

- All reports, publications / papers, theses etc. are to be written using Latex, which is the predominant text setting tool in computer science and engineering. There are plenty of Latex editors around that make working in Latex comfortable and you have free choice on these (I recommend TexMaker or LEd). Tools such as Word are not to be used for these documents as it is an unacceptable choice in our community. This is non-negotiable. I have very rules that I am strict about but this is one. A student unwilling to use Latex will need to find themselves a different supervisor.

- Record all references in Bibtex format. I recommend the use of tools such as JabRef or Zotero. (I personally use the former.)

7 Continuous Writing

When new students start, they often see the actual research work as what comes first and then writing is considered something of an add-on that occurs at the end. On the contrary, it is important to start writing from day 1. One of the reasons is that it takes time to learn how to write scientifically. Another one is that it significantly eases the student’s workload later on in the project if they start writing from the beginning.

This starts with a first rough project plan and continues on to a working document in which the student records a brief summary (1-2 paragraphs at most or simply dot points) of all the papers they have written. Students should be prepared that I will enforce the use of Latex and Bibtex from an early point onwards. This is the common norm in our field and the sooner a student gets used to these, the easier it will be in the long run. I will periodically ask for a copy of this document, so that the supervisory panel can see and comment on what papers you have read and make sure that you the right background material at hand for your studies.

Next, students will need to write a comprehensive literature review, which will form the basis for the literature review chapter in their thesis. Typically, the literature review written towards the end of the first year is about 80% of what the final version of that chapter will be
in the thesis, so I will pay particular attention that this document is in good shape towards the end of the first year.

I also like students from year 1 on to think and write a thesis outline. Again, students can already set this up in Latex as a very early draft document of the thesis. Initially, this will only contain the motivation for the project in the introduction chapter, the literature review and the bibliography as well as the chapter headings of the planned work, but in my experience it helps to focus the mind in this way and the writing then becomes a less daunting task, because one is ‘filling in the gaps’ in the document, rather than starting with a blank document from scratch. As the student progresses and has more work done and results to show, more chapters are filled. Of course, it is natural that this draft thesis structure changes over time. If we could plan research perfectly, we would all do it. It is the nature of research that some things are unknown in advance and that, hence, the project as well as the documents evolve.

This continuous writing very much helps against ‘writer’s block’ that often strikes in the final stages of the research degree, when a thesis must be produced. Getting into the habit of writing all the time helps not to fall into this trap or to overcome it more easily.

8 Publications

Writing publications that promote and show your work and results is an important component of HDR studies. It is equally important for the student when they apply for jobs after the studies. If they wish to stay in academia or seek opportunities in industrial R&D, publications are a must. How many is a good number for a PhD student depends on the particular field, but in our areas students will want to aim for 4-6 publications as an outcome from their studies. These should include at least one highly regarded international conference as well as several well regarded regional / Australian conferences plus at least one journal paper in a reputable journal. In an age, where citation counts and impact factors are becoming more and more important, there is no substitute for quality. Students – with guidance from the supervisory panel – will need to find the right balance between quantity and quality. Both is needed.

As mentioned before, the use of Latex and Bibtex for all publications, including theses, is non-negotiable with me and in our field. It is based on the professional TeX typesetting tool that is used by many publishing houses. Practically all journals and conferences provide a Latex template for the submission of papers. I expect that students read the paper preparation and submission instructions carefully and adhere to them.

To provide effective mentoring and reviewing for the process of paper writing, I require draft papers to be sent to me at least 2 weeks before due date. Earlier is even better! Students can expect from me to provide feedback within 72h generally. Please send the entire Latex sources and all image files etc. required, as it is generally easier for me to directly edit the draft papers in Latex, then to annotate them else wise. In return for my contributions to both the work reported in the paper and paper editing process, I ask that my name is listed as a co-author of the paper. Draft papers sent to me later than two weeks before the deadline may not get much reviewing done and will often lead to me suggesting that the paper is not ready for publication yet and should be sent instead to a different conference at a later stage. This is less of a problem for journals where there is a continuous acceptance of new papers, but for conferences, there is typically only one deadline per year. If a student insists to submit a paper that I deem not to be ready, I will ask for my name to be removed from the co-author list.

I highly recommend that students do not rely on other researchers finding their papers through Google or the electronic databases that publishers provide (e.g. IEEExplore, Springer-Link, ScienceDirect) but seek an active web presence through their own individual homepages. Virtually all publishers allow authors to post copies (or at least of final draft versions) of their papers on their own homepages and this can be a great way to spruik your research.
9 Networking

Another important component that is often neglected is that of networking. A student’s HDR studies years lay the foundations for future collaborations. I will introduce you to fellow researchers in Australia and overseas whenever I can, particularly at conferences but also when we have visiting researchers and I expect students to actively participate in these opportunities and to talk about their research. Equally, I expect students to network with their peers, both those based at other Australian universities and overseas.

Furthermore, I strongly recommend that students spend some time as part of their HDR studies in a different lab, ideally overseas as it allows them to get a different perspective of things, see how other groups / labs solve certain problems, meet new people and so on. We are generally well connected and often can put students in contact with top researchers and groups in Europe and the USA.

10 Summary of Expectations

I think it is important that both sides have a clear understanding of what they can expect from each other. Therefore, in summary, I expect the following of you as a student:

1. You will come to the scheduled meetings, both individual meetings as well as group meetings, and are on time. Should you be late, you inform me.

2. You take these meetings seriously and come prepared. Provide me with a summary of your recent work, any questions you might have and a plan for the coming weeks and months. While I am happy to talk about almost any subject, if the time allows, work comes first.

3. Any actions arising from the meeting are followed up on.

4. You become part of the community, both at the University as well as in Australia and overseas. That involves to join relative societies and organisations, e.g. the IEEE.

5. You become an expert in your chosen area, work hard on achieving your goals and are committed to the project and studies.

Equally, you can expect the following from me as a supervisor:

1. I will come to the scheduled meetings on time and should I be late or the meeting postponed, I will inform you.

2. I will devote 100% of my time during the meetings to work with you, understand your problems, try to find solutions and provide guidance as a mentor. At other times, whenever possible, I will make myself available within the constraints of my job.

3. If any of the actions arising from our meetings are for me to carry out, I will do so by the next meeting or any other explicitly agreed time.

4. I will give you timely, honest and constructive, high-quality feedback that is aimed at improving your work. None of my comments are about you as a person, only your work, so if I criticise something, it is an aspect of your work, not you as a person!

5. I will guide and mentor you as much as I can, so that your work can rightfully be considered high-quality and world-leading research and be recognised as such.