The PhD Journey: Reaching Out and Lending a Hand

CHIIR 2021 Tutorial

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ABSTRACT

Undertaking a PhD is a challenging yet fulfilling experience. PhD candidates become deeply involved in developing a myriad of skills over many vital facets, including (but not limited to): *(i)* the development of their research ideas; *(ii)* learning how to conduct their research; *(iii)* engaging with others about their research — both locally and internationally; *(iv)* developing a profile as an independent researcher; and *(v)* developing their teaching portfolio. Of course, a candidate is likely to encounter many highs and lows during their candidature. Periods of turbulence can be overcome through the application of various techniques to adapt and learn from these experiences. This tutorial will partly aim to introduce attendees to several techniques to help them advance in the PhD process. It will be presented by two recent PhD graduates in the field of *Interactive Information Retrieval* (IIR), who are both close enough to their respective times as PhD students to remember the highs and lows of PhD life, yet be far enough removed from the process that they can adequately reflect and provide insights into their own experiences — *both good and bad.* This tutorial will empower attendees to share their own *do's* and *don'ts*, review their practices for success, and refine what productivity strategies work for them. It will provide an impartial platform for an open and honest discussion about the *journey of undertaking a PhD*, led by the presenters without judgement.

CCS CONCEPTS

• **Social and professional topics → Computing occupations**.

KEYWORDS

Research methods, PhD research, Productivity, Success, Experiences

1 INTRODUCTION AND MOTIVATION

Attaining a PhD is a difficult thing to do. Being able to place the letters *PhD* after your name is a symbol that an individual has become an expert in their area, and also shows that they have the tenacity and perseverance to *keep going.* PhD candidates embark on a challenging and character-building path, and are vying to become one of a small percentage of people who hold a doctoral degree. In 2018, only 1.1% of people in the 25-64 age bracket were reported to hold a doctoral degree across all *OECD* countries [8, Figure B7.1]. This fraction of the world's population will receive the opportunity to develop their skills in a formal setting at a university, with the necessary support and guidance from their supervisor(s) [2, 9].

During this period, a PhD candidate receives support to learn new skills, connect with people, and advance their analytical thinking — all within a relatively short period [4]. To achieve this, extensive resources (e.g., financial, intellectual, and (inter)personal) must be invested in the candidate. Resources should be used to their full potential to offer the greatest chance for the candidate to succeed. Indeed, this investment is crucial: becoming an efficient researcher is part of the bigger ecosystem of *giving back to society.*

Completing a thesis for a PhD degree is *only the sum of its parts.* The investment in time and effort that a candidate expends inevitably means that there will be countless experiences — both positive and negative — that make up the completed product. Despite the support networks that are already in place for doctoral candidates, we argue that structured peer support could enhance and strengthen the student CHIIR community. As two early career researchers who have recently completed their PhDs, we are in a unique position to share insights into what we did to succeed, and provide support to contemporary PhD candidates.

We propose to use this tutorial as a vehicle for an in-depth and open discussion about an *individual's PhD journey.* We wish to engage with (prospective) PhD candidates and share our experiences of PhD life, while drawing in commentary from our peers. It should be noted that this tutorial is not meant to replace any PhD supervision or support from the student's university — rather, we aim to present this tutorial as a peer-to-peer exchange of experiences, and aim to provide a platform for discussions of the different methods that individuals have used to succeed. We aim this tutorial to be a springboard for current and future PhD candidates to create and foster lasting networks with fellow students, instil them with the confidence to reach out to senior researchers, celebrate achievements, handle disappointment gracefully, normalise feelings, and encourage active participation within the community. This tutorial should not be considered exhaustive. It should however act as a stepping stone to a well-connected and strengthened CHIIR community — especially at the more junior level.

2 SYLLABUS

We present a tutorial with the following key themes.

2.1 Key Presenter Themes

2.1.1 Everyday Practical Tips. This first theme will introduce and discuss practical tips. This will begin with time-management and writing tools — including good working practices. We will introduce how to plan, keep track, and optimise available time. We will share resources including tips and tricks on writing or editing research papers and theses [3]. We will also encourage attendees to take ownership of their project, including steering and framing their work. Afterwards, we will draw attention to mental health, sharing several techniques that we found useful to develop our relationship with stress, or dealing with negative emotions.[1]

2.1.2 The Challenges of a CHIIR PhD. A CHIIR PhD can present a unique set of issues and problems that must be understood by candidates. While such assistance is already available (e.g., work by Kelly [5]), we will devote time to highlight some of the important lessons that we learned during the course of our respective PhDs including insights into managing student/supervisor relationships.

2.1.3 Presenting and Communicating your Research. Research communication is the process of interpreting and presenting research findings to a wider audience and is a key aspect of being a scientist. In this theme, we will provide tips on not only explaining your research, but also how to present research in presentations. We will provide some frameworks to summarise and story-tell research findings and show examples of noteworthy presentations.

2.1.4 Writing up the PhD. For this theme, we will draw on previous materials [7] to present an in-depth discussion about the key lessons learned during our respective write-up phases. We will provide tools, tips and resources to improve and increase a PhD student's sense of capability to finish their thesis. Furthermore, we will share experiences of the transition from being a PhD student to post-PhD, complete with insight from a senior academic.

3 LEARNING OUTCOMES

This tutorial will increase a candidate's sense of purpose, capability, their connectedness with their community, and resourcefulness to enhance a sense of culture [6]. In addition, this tutorial will emphasise that the journey embarked on by a PhD candidate does not only follow a solo path of research and self-development, but is instead a *shared journey.* Students will be encouraged to succeed in their research, and we will highlight support that is available. By taking part in this tutorial, attendees will acquire knowledge, a peer support network, as well as skills and competencies with:

- time management and planning tools;
- a better understanding of the common pitfalls that may be encountered, and what can be potentially done to solve them; (in terms of work and life and/or relationships);
- confidence to openly talk about *'wins'* and *'losses'*, along with potential obstacles they may encounter;
- an improved understanding on how to communicate to others about their research; and
- ideas to optimise the thesis write-up stage.

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[1]This will **not** be a replacement for professional help, and will be advertised as such.

4 TARGET AUDIENCE

This tutorial is aimed to provide hands-on tips for any (prospective) research student. We provide techniques which can be adapted and incorporated in every researchers' workflow. We will use the natural trajectory of a PhD researcher to progress from *things to do when you start out,* to more *advanced practical techniques* when writing a research paper or thesis. No prior experience in publishing, teaching, or engaging with research communities is needed.

5 PRESENTERS

The presenters for this tutorial are Johanne Trippas and David Maxwell. Johanne and David first met as PhD students at the 24th *ACM CIKM* in Melbourne, Australia in 2015.

Johanne Trippas Dr Trippas is a *Doreen Thomas Research Fellow* at the *University of Melbourne*, Australia. She obtained her PhD in Computer Science from *RMIT University*, Australia. She was awarded the RMIT University Deputy Vice-Chancellor's Higher Degree by Research Prize for her doctoral work and thesis. Recently, her work has focused on developing next-generation capabilities for intelligent systems for different contexts, from: spoken conversational search; digital assistants in a cockpit; to using Artificial Intelligence identifying cardiac arrests. She has been a *SIGIR* Student Liaison, has co-organised several workshops [1, 10], and has recently been appointed as vice-chair of the *SIGIR* Artifact Evaluation Committee.

David Maxwell Dr Maxwell is a postdoctoral researcher at *Delft University of Technology (TU Delft)* in the Netherlands, working with Dr Claudia Hauff. He graduated with a PhD in IIR from the *University of Glasgow*, Scotland, in June 2019, working in the School of Computing Science. His research interests include understanding user behaviours when undertaking complex search tasks, and modelling such behaviours. Over the years, David has delivered well-received talks on his experiences during his time as a PhD student—from discussing his research, to the sharing of the positive and negative experiences that he faced. Recently, he has released an online guide highlighting the challenges (and potential solutions) that students may face when writing up their own PhD thesis [7].

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