Obtaining a PhD in Web Engineering: Tips and Experiences

Sven Casteleyn

Vrije Universiteit Brussel.
Department of Computer Science, Web & Information Systems Engineering Lab,
Brussels, Belgium
Email: Sven.Casteleyn@vub.ac.be

Abstract. Obtaining a PhD in science isn't the easiest of tasks to set one self. To successfully complete this feat, one needs a broad set of skills: intelligence, the eagerness to contiguously learn, the willingness to dig into the tiniest details, imagination, and, foremost, determination. Obtaining a PhD in science is a journey through (a part of) science, a journey whose origin is set, but whose destination is unsure and whose path is full of obstacles. But above all, it is a life experience which forms the entrepreneur for the rest of his life. This keynote talk aims to provide a guide for starting PhD students in science in general, and PhD students in Web Engineering in particular. Therefore, the field of Web Engineering is first explored. As stated by Murugesan and colleagues in 2001, Web Engineering is *a discipline concerned with the establishment and use of sound scientific, engineering and management principles and disciplined and systematic approaches to the successful development, deployment and maintenance of high quality Web-based systems and applications.* It is important to note that Web Engineering is on the crossroad of many existing research fields, e.g. software engineering, hypertext, requirements engineering, HCI and others, yet due to the particularities of the Web, distinct opportunities for research arise. The Web is also continuously evolving, e.g. mobile Web, Rich Internet Applications and Web 2.0, Semantic Web, Internet of Things, and each of these new direction gives ample opportunities for research for PhD students to indulge themselves. The second part of the talk addresses the questions every PhD student inevitably asks himself: am I smart enough to do a PhD? Why would I want a PhD? How do I find a topic? What is "doing research"? Tips and experiences are shared on how to successfully start doing research, with an emphasis on cooperation. The importance of systematic research methodologies and a sound research validation are discussed. The PhD student is also given insight in scientific communities, and the scientific publishing process in general. At hand of the scientific result pyramid, the importance of different types of publications is explained, and concrete examples of publishing fora for Web Engineering research are given. Evidently, after successfully performing research and disseminating the results using the proper publishing channels, one of the final steps in obtaining a PhD is writing the dissertation itself. As this is the most formidable task most have encountered so far, it might be hard to overcome this last hurdle. Therefore, advice is given on how to organize a dissertation, both in structure, and time and work management, and pointers concerning writing style are included. To conclude the talk, the PhD student is given a friendly warning about common pitfalls, and handed some tips on how to avoid them.