Chapter 8.1
Women in Brazilian CS Research Community: The State-of-the-Art

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ABSTRACT

Many communities have been concerned with the problem of bringing more girls to technology and science related areas. The authors believe that the first step in order to solve such a problem is to understand the current situation, like to investigate the "state-of-the-art" of the problem. Therefore, in this chapter, they present the first study to identify which areas of Computer Science have more and less feminine participation. In order to do so, they have considered the program committees of the Brazilian conferences in those areas. The authors' study evaluates the 2008 and previous editions of such conferences. They also discuss some Brazilian initiatives to bring more girls to Computer Science as well present what else can be done.

INTRODUCTION

Many communities from different countries have been concerned with the problem of the low number of women studying and working on technology, engineering, and science related areas (Brainard & Carlin, 2001; Ceci & Williams, 2006; Dewandre 2002; Hyde et al 1990; Ivie & Ray, 2005; Patterson 2005; Ramsey & McCorduck, 2005; Ticoll, 2008). Specifically, technological areas are fascinating and provide a vast range of opportunities to their professionals. Still, we wonder why the interest of girls in joining the Engineering and Computer Science fields (among others) is decreasing.

Studies inform that there are usually three points of view to understand the low interest of

DOI: 10.4018/978-1-61350-456-7.ch8.1

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women toward science and technology oriented careers: (*i*) the biological, gender differences; (*ii*) the social construction of technological careers as a male domain; and (*iii*) the individual differences among women related to technological oriented work and workplace (Trauth et. al, 2004). Nonetheless, what we can do to reverse such a scenario and bring more girls to those fields is still a big question (Harris & Raskino, 2007; Ramsey & McCorduck, 2005; Simard 2007).

We believe that the first step in order to solve such a problem is to understand the current situation, like to investigate the "state-of-the-art" of the problem. Instead of evaluating all the so-called "hard sciences" in general, we focus in *Computer Science* (CS) because it is our area of expertise. Furthermore, we notice that there is a variety of studies specific for women in CS and Information Technology (IT), such as (Ramsey & McCorduck, 2005; Simard, 2007; Ticoll 2008; Trauth et al 2004). Nonetheless, we focus this work on studying the women participation in *research* on CS related areas (*i.e.*, we do not consider women presence in the CS/IT industry). It is very important to notice that CS per se is a major science composed of many subareas, which are completely different from each other. For example, Databases, Computer Networks, Formal Methods, and Computer Graphics (just to cite a few) are entirely distinct areas with their own specific features, problems, techniques, and applications. Furthermore, each of those has its own research community with distinguished conferences and symposia, such as VLDB (Intl. Conf. on Very Large Data Bases), INFOCOM (IEEE Conf. on Computer Communications), FM (Intl. Symp. on Formal Methods), and SIGGRAPH (Intl. Conf. and Exhibition on Computer Graphics and Interactive Techniques), and journals such as ACM Transactions on Data Base Systems, Computer Networks, ACM Transactions on Graphics, among many others.

Given the unique profile of each subarea, it does not seem accurate to study the number of women in the general CS area. For example, a quick look at those conferences shows that the women participation in their program committees is very distinct from each other. Therefore, in order to have more accurate statistics, it is necessary to investigate each subarea individually. Such investigation is vital for qualifying the state of the art scenario. In particular, we believe that once we have identified the "most feminine subareas", we can investigate why those areas are so successful in their number of women. So, instead of trying to find out what on the technological areas do not attract girls, we will focus on what has *attracted* them.

Nonetheless, there is one problem with this idea. To the best of our knowledge, current statistics about women (and other minorities) participation in CS and other sciences present just the general number (CRA 2007; Ivie & Tay, 2005; Harris & Raskino, 2007; Simard et al, 2008; Simard 2009). In other words, there is no division of the number among the subareas in which women study or do research. Another particular problem is that, in Brazil, statistics on college and graduate programs (over students and faculty members) do not differentiate gender. In this chapter, we attempt to provide a *first* overview of the current presence of women in the Brazilian CS research community through an empirical study. While it would be interesting to have worldwide numbers, we decided to focus on Brazilian numbers. Then, a second step would be to investigate whether such numbers reflect the international situation as well. Once we have identified which of the CS subareas have more women participation, we can investigate those areas and find out which specific features attract the "feminine eyes". Furthermore, we can target the communities with less feminine participation in order to reverse such a situation. Finally, in this chapter, we also overview two Brazilian initiatives for bringing the CS female community together, and comment on what else can be done.

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