

Summer week of computer science for girls

Abstract

An annual event is held at the Department of Computer Science and Engineering (DCSE), Faculty of Applied Sciences, University of West Bohemia (UWB) in Pilsen, Czech Republic, focused on propagating higher computer science education among girl students who are choosing their future university focus. The event has been held since 2011 and although it is hard to distinguish its effects from other initiatives targeting an increase of female students of computer science, the ratio of female students in the first year of computer science courses at UWB rises steadily for the last decade.

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Nominator: **Doc. Ing. Libor Váša, Ph.D.** (lvasa@kiv.zcu.cz)

The nomination can be considered as a runner up.

Event description

An event admitting solely female participants has been held at the DCSE since under the name Summer week of computer science for girls (Týden letní informatiky pro dívky) since 2011. Its main focus group is female students of grammar schools and technical high schools, although there is no explicit age limitation. The event is held at university grounds for five full days (8.00-16.00) in July or August, and mostly consists of lectures and practical workshops lead by DCSE staff. Apart from that, several additional excursions are also part of the event, such as a visit to the Techmania science centre, which has been a partner organization for the last decade.

The lectures taught span a wide range of technical topics, from programming in general (basics of Java and Scratch programming languages were presented several times) to more specialized topics, such as digital photography, digital image processing, computer networks, artificial intelligence and others. In the past, the event has been held as general, covering the whole range of computer science, while the last two events were designed as more focused on a particular area.

In 2017, the main topic has been computer graphics and virtual reality, during the week the participants were able to create their own virtual reality based application. Related courses on 3D object modeling, texture acquisition, scene composition and scripting were held by members of the Centre of Computer Graphics and Visualisation, which is a sub-unit of the DCSE. The participating girls could not only could test their creations using the virtual reality gear available at the university, but they also created a standard desktop versions of their apps that could be shown to their peers using a common hardware.

The 2018 event will be focused on neuroinformatics, under the supervision of the Neuroinformatics group of the DCSE. The participants will acquire their own brain activity data using the hardware available at the department, and in the course of the week, they will learn how such data can be processed and what can be learned from it.

Each year, the event also included a panel discussion with female computer science professionals from the region and current female computer science students of the university. The participants could learn from the panelists what are the common obstacles in computer science studies and practice for women, and the general disproportion of male/female practitioners of computer science has been often discussed.

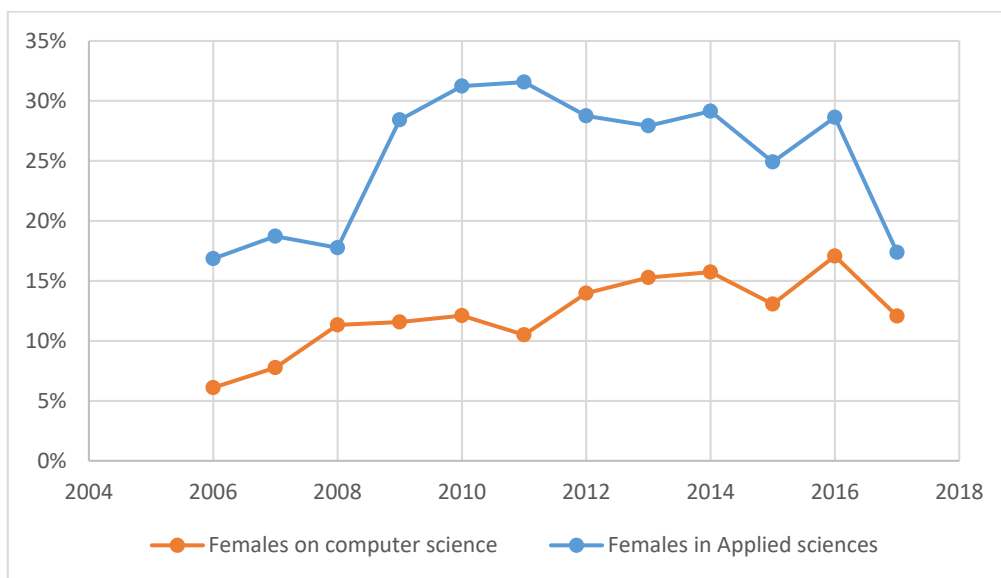
In 2016, Tamara Newberger, wife of the then ambassador of the USA in Czech Republic Andrew Schapiro and a female researcher and practitioner in computer science herself, took patronage over the event and attended the panel discussion.

Event Impact

The attendance of the event varied in the years from 6 – 20 participants, and most were very enthusiastic about the event. The organizers have collected anonymous feedback from the participants with predominantly positive results. The Facebook page of the event (<https://www.facebook.com/TyLiDi/>) has over 80 followers and the website of the event (<http://tylidi.zcu.cz/>) has a frequent traffic.

Unfortunately, the organizers do not keep personal information about the participants due to data security concerns, and therefore it is hard to quantify the actual impact the event had on the participants. It is known that several of the attending girls enrolled to a computer science or computer engineering course at UWB after the event, however, it is still unknown whether or not the event has played a major role in their decision.

In general, the ratio of female students of first year computer science and computer engineering bachelor courses at UWB steadily grows at least since 2006, as shown by the following chart (orange line):



From about 6% in 2006, the percentage has risen to 17% in 2016. The sharp decrease in 2017 seems to correlate with a decrease of the percentage of female students of the whole Faculty of applied sciences (blue line in previous chart). The exact cause of this decrease is not known and currently the faculty and the department are investigating the possible influences.

In general, it is still hard to tell what exactly is the impact of the Summer week of computer science for girls, since the global increase is certainly also caused by other factors, such as better general image of computer science and computer engineering and other events focused on propagating IT among females. Still, we hope that our event did in fact contribute to this development and that it will continue favorably in the future as well.