HCI Education in the Czech Republic

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Abstract: In this paper we report on some problems arising during the building of an educational system in the area of human computer interaction in the Czech Republic. An overview of teaching and educational activities, courses and study programs related to the HCI field being offered by the most significant Czech universities as well as the overview of public and common activities in the HCI developments are presented.

Keywords: HCI systems, user interfaces, education in the HCI field

The introduction of computers into education in larger scale started in the Czech Republic on the beginning of seventies. The first stage was the use of computers for simulation of processes, testing of students, processing of student exams, university agenda etc. In such a way both students and university staff came across with computers. This stage could be understood as a passive contact with computers. The next stage was active use of computers – mainly in the form of preparation of programs for them. This situation was typical for the second half of seventies and beginning of eighties. Especially on the beginning of this period there were not enough computers to install them in every single school. The solution was to create a network of computer centers that covered the need for the use of computers by students.

The situation has been improved in the second half of eighties when small home computers of local production appeared. The positive aspect was that there was a lot of people who were able to design computer and also software for such a computer. These people were able later on to employ more advanced technologies for specific applications using the experience gained.

The nineties were characterized by wide availability of modern computer technologies. The recent numbers show that e.g. the number of Internet users and mobile phone users is comparable with numbers from technologically advanced countries.

The development described above influenced also the way how the problems of user interfaces use and development were perceived in our country. Currently the prevailing volume of education in the field consists of courses targeted to the mastering single systems (like X–Window etc.). Another part of education in the field is linked up with the special features of specific interfaces (e.g. problems of computer graphics, problems of psychology etc.). Only a small fraction of education is dedicated to the theory of design and implementation of user interfaces (formal models, automatic generation of user interfaces, verification of UI, cognitive aspects of UI etc.). Universities will need encouragement to perceive HCI as a sort of critical technology and the accompanying skills and knowledge as fundamental to a student's education and preparation for jobs in the information age. HCI education should be considered as an important part of computer science curriculum at Czech universities. This could be achieved by transferring experience gained in HCI education in countries with long tradition of HCI education.

Many new courses on Computer Graphics, Virtual Reality, User Interfaces, Speech and Language Processing, Dialogue Systems, Human-Computer Interaction in Natural Language as well as the complete study programs on Intelligent Computer Systems and Human-Computer Interaction were opened at the Czech Universities in the last 12 years. There are hundreds of students who are studying with a great enthusiasm the theoretical and practical problems of HCI developments. Knowledge of their potential and knowledge of their technical background is quite common in this country. Applications are not very frequent at the present time

– especially when some sophisticated equipment is necessary.

Another potential use for HCI methods and resources could be in the WWW environment – that means e.g. the use of VRML, XML, VoiceXML, XSL, etc. These tools are used in many applications at present time and the interest in using these tools is steadily increasing. Last but least, the use of various tools for virtual reality implies new questions concerning the interaction in 3D space. There is rapidly growing interest in authoring tools (HTML etc.). In many cases the authors of web pages are faced with the same problem as creators of other usual user interfaces: they manage the programming aspects fairly well but are poorly educated in the psychological issues of user interfaces. One very important application of multimedia is distant learning. This form of education is just beginning in our country. Nevertheless, some projects (based mostly on feasibility studies) have started recently.

The courses and study programs offered by the Czech universities were developed on the base of ACM Computer Science Curriculum, with the respect to recommendations issued by the IFIP TC.13 for HCI, they are fully comparable with the courses and study programs of renowned universities in industrially developed countries and offered by all significant Czech universities. More than 400 students are studying the problems of HCI systems and their developments at Universities in Prague, Brno, Pilsen, and Liberec in this time. We hope, that this number of students will probably cover the needs of the Czech industrial sphere in the HCI field for the next 4 – 5 years.

A big help to educational activities in the HCI field have been contacts with international professional organizations abroad. The Czechoslovak National Committee of IFIP was new established in 1991. The members of the National Committee regularly attended the meetings of all TCs and many WGs since this year. After the splitting of Czechoslovakia in 1993 was established the Czech National Committee for Information Processing. This committee filled in the missing Czech representatives to the majority of TCs of IFIP very soon, the Czech representative in the TC.13 for HCI attends the meetings since 1992, as the appreciation of his active participation on the TC.13 negotiations he has been charged with the organization of the Spring TC.13 Meeting in Prague and Pilsen in 2002. The activities of the IFIP National Committee in the area of HCI are closely coordinated with a Czech National SIGCHI Chapter in this time.

The Czech SIGCHI chapter has been established in 1998. The idea was to get people from the Czech Republic who are active in the field of HCI together. As HCI covers a wide spectrum of activities people were working in their particular areas only without being aware of other related activities that had roots in other disciplines of computer science. As the potential community is rather small it was necessary to define the way the people will communicate. The idea was that the local SIG should serve as a discussion forum in electronic form concerning important topics related to HCI.

As the local SIG works as a part of national ACM chapter it is possible to use the infrastructure of this chapter. The main result is that a SIG library has been established in ACM office. Besides books dealing with HCI topics a set of proceedings and tutorials from recent CHI conferences is available for potential users. Also information about conferences from related fields that take part in the Czech Republic are distributed. This concerns first of all conferences from the field of computer graphics and voice communication.

A very important part of HCI activities in the Czech Republic are conferences and workshops that deal with topics related to HCI. There are two important conferences of this kind: WSCG and TSD. Both are organized on annual basis. The first one (WSCG – Winter School of Computer Graphics) is conference dealing with computer graphics where many papers each year deal with problems of graphical interaction. The second conference mentioned (TSD – Text, Speech and Dialogue) deals mainly with problems of speech synthesis, recognition and speech communication. Nevertheless there is a conference track where general problems of human-computer interaction are discussed. Participation in both conferences serves to Czech professional community as an inspiration both for reasearch and teaching. This is the platform where exchange of ideas between Czech and foreign experts (both scientists and teachers) has been realized.

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