

Panel: "How to attract the right students to Computer Science?"

Intervention by Carl August Zehnder, em. Professor ETH Zürich

In recent years the number of freshmen students in Computer Science (CS) departments was decreasing substantially, mainly since the IT job market became less attractive compared with the preceding boom years. However, CS does not only need more students, but more bright ones. They shall be future innovators in the information society.

Today the major handicap to get bright CS students is the fact that in most Swiss schools on the Gymnasium level ("High School", Kantonsschule/Ecole cantonale, Secondary Level 2) the students have no contact with attractive IT/CS topics. In most of those schools the subject "Informatics" (Informatik/Informatique/Information Technology/IT) has deteriorated to so called "Integrated Informatics", i.e. user training on text processing, spreadsheet and internet use and similar topics, presented by their teachers of languages, geography or other non IT subjects. No doubt – students need such IT user knowledge in gymnasias and in universities (and everywhere else), however with this approach they lack the basic IT concepts as well as any challenging ideas towards CS. But without personal contacts to high level CS topics good students cannot be attracted to CS curricula.

Of course this situation could be improved best by introducing a compulsory subject "IT or ICT fundamentals" (Grundlagenfach) in all gymnasium curricula and – as an intermediate step – with an optional "Ergänzungsfach" (following the terminology of the new MAR, Maturitätsanerkennungsreglement), as proposed by the Swiss IT Teachers' Association SVIA. However such changes of formal regulations are politically difficult and – even if accepted – many years will pass until their implementation in the federalistic Swiss school system. But we should attract better CS students much earlier – now!

Therefore we – the university CS responsables – must find *direct ways* to present highlights of our discipline to interested gymnasium students.

A package of such ways could be (this list can be enlarged):

- Identify each year a selection of scientifically attractive high level CS problems.
- Make those problems accessible to gymnasium students over parallel channels (WWW, teacher associations, Computer exhibitions, Museum für Kommunikation, etc.)
- Offer "CS problem days" on that year's problems at CS university departments (to provide early contacts for interested students).

I would be excited when associations like SARIT and/or SI could take the initiative to start and coordinate such activities.

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