A review on open-source and proprietary software technologies practised by Finnish computer-engineering students.

Author One Bold

Name of Institution, City, Country, email of Author One

Abstract

Different higher education institutions take different approaches when teaching software development skills to engineering students. One of the diverging points is the use, or not, of open-source software. Some institutions are teaching our future computer engineers on a base of open-source systems and programming languages freely available on public domain without restrictions to use in education. Others perform partnerships with big software-houses such as Microsoft, Oracle and SAP; teaching future computer engineers on a base of proprietary technology. In this paper we address this interesting invariance by performing a systematic content analysis of courses syllabus available to computer-engineering students in an universe of 12 Finnish universities. We identify the open-source and proprietary technologies practised by Finnish computer-engineering students at each course, department, faculty and university. By carefully analysing data we obtained already some interesting geographical patterns on universities teaching of open-source or proprietary technologies. We also show hot universities size impact is correlated with the use, or not, of open-source technologies in computer-engineering education. For future, we outline that crossing the obtained results with governmental databases on employment, entrepreneurship, business venturing and intellectual property; can answer interesting questions on how teaching, or not, open-source technologies can influence the employability and entrepreneurship ambitions of computer-engineering students.

Keywords: *Computer-Engineering, Computer-Science, Informatics, Education, Entrepreneurship*

1. Methodology

We started with a manual and semi-automatic content analysis of course syllabus from the following universities:

1- “Aalto University”
2- "Lappeenranta University of Technology"

3- "Tampere University of Technology"
4- "University of Eastern Finland"
5- "University of Helsinki"
6- "University of Jyväskylä"
7- "University of Lapland"
8- "University of Oulu"
9- "University of Tampere"
10- "University of Turku"
11- "University of Vaasa"
12- "Åbo Akademi University"

Then we developed a measurable quantitative framework on open-source and proprietary software use on teaching by universities.

Finally we performed simple regression analysis of the collected data against the different factors:

1- Size of the University, number of students.
2- Size of the University, number of staff members.
3- Geographical location.
4- Proximity to neighbouring country: Russia
5- Proximity to neighbouring country: Sweden
6- Proximity to neighbouring country: Estonia
7- Population of the national district where University is based.
8- Geographical proximity to software-houses .

References