頂大計畫專題演講

日期：2013年5月17日(五)　時間：10:00 am~11:30 am

地點：臺師大公館校區 科教大樓5F

演講題目：*Personalised Open Education for the Masses (POEM)*

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Abstract

At the end of 2012, millions of students have enrolled in the MOOC (Massive Open Online Courses) proposed by the most renowned universities (mooc-list.com). To attend a course or seminar, students only need a computer and internet connection. They can do course exercises and address difficult problems together with other distance learners. Right now 2 types of MOOCs are identified: xMOOCs (that are standard University courses available as open access videos with periodical exams at predefined dates) and cMOOCs (cooperative contents that are not organised as courses).

POEMs aim at implementing 4P education, in order to provide personalised education for the mass. The aims of a 4P education are :

- **Participative education**: Students particpate through their profile, that can be used to establish optimal pedagogical paths thanks to a man-hill paradigm, but also by augmenting exercises and contents using refined evaluation techniques such as ELO ranking and co-tutoring.

- **Predictive education:** The trajectory of a particular student can be compared with other successful trajectories, enabling the system to suggest new courses well adapted to the student, both in terms of contents and difficulty. Predictive education will therefore provide good guidance to students during their studies.

- **Preemptive/Preventive education:** The system can avoid future difficulties (especially withdrawals) by analysing the choices of students and suggesting alternative successful paths towards the student's aim.

- **Personalized education:** Learning can be seen as a journey within a complex system made of thousands of independent small pedagogical items, guided by a 3D knowledge map from a starting location (the prior knowledge) to a destination (the learning goals) adapted to each and everyone: a journey to learn together, with drills to practice the new concepts that need to be understood and learnt.

We present the POEM implemented within the educational ecosystem of the Strasbourg Complex Systems Digital Campus, that incorporates Ant Colony Optimisation (ACO) techniques adapted to humans (man-hill paradigm) in order to guide students through many e-learning items. ELO rating (used in chess competitions) is used to rate both the students and the e-learning items, refine the model and propose items corresponding to the level of each student. ELO also represents a powerful audit system capable of tracking semantic problems in exercises. The dynamic and emerging content in POEM is designed to promote better access, exploitation and ultimately, generation of knowledge.

Finally, an extension to Know-How teaching will be presented as well as submitted European Projects on the subject.

G. Valigiani, E. Lutton, P. Collet, "Adapting the ELO Rating System to Competing Subpopulations in a Man-Hill", Proceedings of the 13th ISPE International Conference on Concurrent Engineering (ISPE CE 2006), September 18-22, 2006, AntibesG. Valigiani, Y. Jamont, R. Biojout, E. Lutton, P. Collet, "Experimenting with a Real-Size Man-Hill to Optimize Pedagogical Paths", H. Haddad et al., Eds., Symposium on Applied Computing, ACM, Santa Fe, New Mexico, 2005

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