MSHS AXE 1 COGNITION & COOPÉRATION

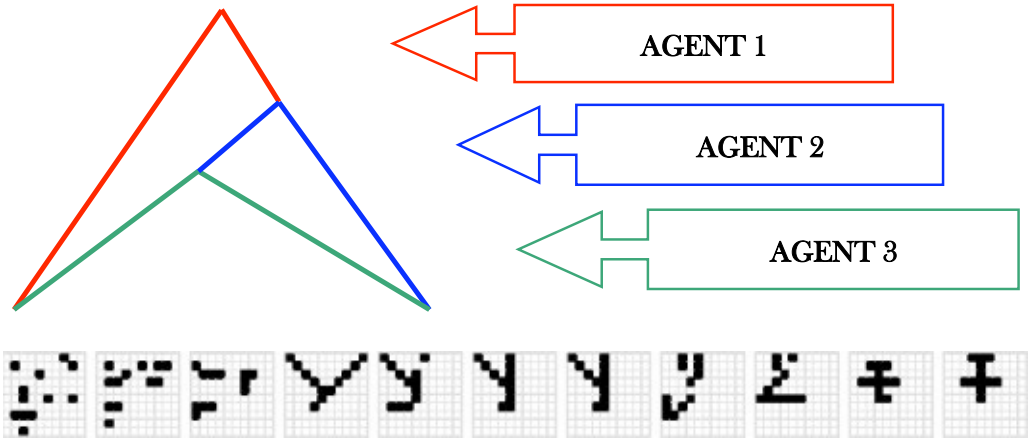
12 MARS 2015 12-14

Disciplines concernées a priori

informatique, psychologie, philosophie, mathématiques

Relevant domains

Computer sc., psychology, philosophy, mathematics



An introduction to agents and knowledge transmission Symposium

Axe 1 - MSHS Sud-Est

Multi-agent systems are complex frameworks that are concerned with reasoning with distributed knowledge. When a community of agents possesses separate pieces of information, the community is far from being able to collaborate. The community will most probably require more complex forms of epistemic logic such as mutual knowledge or common knowledge. Accordingly, models of complexity can be grounded in an analysis of the *complexity of the communicative process* that agents must carry out to reach a state of shared knowledge. When no such knowledge is created, cultural transmission can easily let things slide... For instance, iterated reproduction of material in a group of children can facilitate the emergence of structure. Because of the children's processing limitations, children may require more structure to render complex inputs learnable, thus decreasing the algorithmic complexity of the material along the transmission process. *Algorithmic complexity* is a pervasive notion in the social science, with theoretical impact in cultural transmission. Although uncomputable, a new way to approximate complexity of short strings is now available, and this symposium introduces with a method that has been implemented in a user-friendly R package named *acss*.

A third part of the symposium will focus on *trust*. Information provided by a source should effectively be assessed by an intelligent agent on the basis of several criteria: most notably, its content and the trust one has in its source. In turn, the observed quality of information should feed back on the assessment of its source, and such feedback should intelligently distribute among different features of the source — e.g., competence and sincerity. A formal framework is proposed in which trust is treated as a multidimensional concept relativized to the sincerity of the source and its competence with respect to specific domains: both these aspects influence the assessment of the information, and also determine a feedback on the trustworthiness degree of its source. A framework is provided to describe the combined effects of competence and sincerity on the perceived quality of information. The feedback dynamics from information quality to source evaluation are focused on, highlighting the role that uncertainty reduction and social comparison play in determining the amount and the distribution of feedback.

Speakers :

Célia da Costa Pereira, UNS, I3S lab, MinD group (joint work with Fabio Paglieri, Cristiano Castelfranchi, Rino Falcone, Andrea Tettamanzi and Serena Villata)

Nicolas Gauvrit, Algorithmic Nature Group

Fabien Mathy, UNS, BCL

Ouvert au public - MSHS, Nice - SALLE 128