

COST Action IC1205 on Computational Social Choice: STSM Report.

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Host: Nicolas Maudet.

Host institution: LIP6, Pierre & Marie Curie University, Paris.

Host country: France.

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I visited for one week Nicolas Maudet at LIP6, the Informatics Laboratory at Pierre & Marie Curie University in Paris. During this week I collaborated with a number of Paris-based researchers on topics relevant to the aims of the Action, particularly those being pursued by WG3 (information merging). The main topics of joint research were the following:

- *A social choice framework for information merging:* With Nicolas Maudet we studied the notion of information merging in a multi-agent system setting where individual agents with incomplete knowledge about the environment need to make collective decisions to reach a common goal. The components of a computational framework that combines abduction, argumentation and preferences in a deliberation game were identified to enable agents reach consensus before taking a decision.
- *Argumentation and evidence:* With Nicolas Maudet and Gauvain Bourgne we discussed the role of preferences over agent goals and we looked at the argumentation process that provides information merging to support evidence before a decision can be taken collectively. We developed some preliminary ideas on how evidence can be used to support a decision by taking into consideration the roles, expertise and experience of agents. We also looked at how agents can make use of resources to provide evidence and we identified some criteria for arguing about evidence based on these criteria.
- *Collective and Individual Experience:* With Nicolas Maudet, Gauvain Bourgne and Henry Soldano we identified some of the belief-revision issues that we will need to address in the context of information merging using a social choice framework. In this context we explored opportunities on how to apply concept learning in a collective decision making setting, so that to ensure that agents build on their experience in new decisions, thus providing ways to minimize communication in future collective deliberations.

I also gave a presentation to the LIP6 group describing: (a) the motivation from an e-health application that allows agents to provide monitoring, diagnosis and advice on diabetes and (b) a reasoning mechanism that combines temporal reasoning and defeasible conclusions that can simulate extended logic programs of the kind supported by answer-set programming. The talk motivated the application of social choice ideas on the e-health domain. I also had the opportunity to meet colleagues from Paris Descartes, Paris Dauphine and CNRS and find out about their work and its relation to computational social choice.