Computational Social Choice, 3-5 September

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On 3–5 September 2008 the 2nd International Workshop on Computational Social Choice (COMSOC-2008) was held at the University of Liverpool. Computational social choice addresses questions of a computational nature in social choice theory, the study of mechanisms for collective decision making, and explores applications of concepts from social choice theory in computer science. It brings together ideas and techniques from a wide range of scientific disciplines, including theoretical computer science, artificial intelligence, logic, political science, mathematical economics, and philosophy.

COMSOC-2008 was attended by around 80 participants from over 20 different countries. The programme consisted of five invited talks and the presentation of 36 contributed papers, selected from 55 submissions.

The day immediately preceding the workshop was devoted to introductory tutorials. The day started with a general overview of the various research directions pursued within the COMSOC community, presented by the author of this report. This was followed by in-depth tutorials on two important subfields. Jörg Rothe of the University of Düsseldorf gave an introduction to computational complexity theory, specifically aimed at social choice theorists, illustrating a range of complexity classes with problems naturally arising in social choice, such as the manipulation problem in voting, the computation of power indices, or the solution of fair division problems. Christian List of the London School of Economics gave an introduction to the field of judgement aggregation, which studies the problem of producing a consistent judgement regarding a set of logically inter-related propositions by a group given the individual judgements of the members of that group.

During the workshop itself, invited talks were delivered by Moshe Tennenholtz (Technion), William Thomson (University of Rochester), Tuomas Sandholm (Carnegie Mellon University), Salvador Barberà (Universitat Autònoma de Barcelona), and Rohit Parikh (City University of New York). Moshe Tennenholtz gave an overview of his work on ranking systems, systems where the set of voters and the set of alternatives they vote for coincide. Typical applications are search engines, with webpages being the alternatives and a link from one page to another counting as a vote for that page. William Thomson gave an introduction to the field of fair division, and specifically to the problem of dividing an endowment between a group of claimants when the sum of the claims exceeds the endowment available. Tuomas Sandholm reported on recent work on combinatorial auctions, including the design of highly expressive languages for modelling preferences and requirements of business partners, stressing the relationship between the expressiveness of a mechanism (such as an auction) and its economic efficiency. Salvador Barberà gave an introduction to strategy-proofness of voting rules over restricted domains. While, in general, any voting procedure is manipulable (that is, it will sometimes reward voters who misrepresent their preferences), this problem can be circumvented by restricting attention to voters whose preferences satisfy certain constraints. Finally, Rohit Parikh discussed several applications of epistemic logic to the analysis of social procedures. Other topics covered by contributions to the workshop included belief merging,
the study of tournaments, coalitional voting games, and matching theory.

The proceedings of COMSOC-2008 are available at the workshop website. The next edition of the workshop is planned for autumn 2010 and bids for hosting COMSOC-2010 are currently being solicited.

Readers interested in the field are encouraged to subscribe to the COMSOC mailing list.

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