COST Action IC1205 on Computational Social Choice: STSM report

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Dates: from 27-10-2013 to 02-11-2013
Reference :   ECOST-STSM-IC1205-201013-033762

During my STSM in the University of Salerno (Italy), I worked together with my host Giuseppe Persiano as well as with the colleagues Enzo Auletto (University of Salerno), Clemente Galdi (University of Naples), and Diodato Ferraioli (Sapienza University of Rome) on strategic issues of voting. After general discussions on different strategic issues that may arise in an election, we decided to focus on issues related to opinion formation. The term "opinion formation" refers to the process which the voters follow in order to determine which vote to cast in an election that takes place openly in a social network. In this case, one might prefer to express a different opinion compared to his internal belief in order to be close to the expressed opinions of his neighbors in the social network. Two recent papers by Jon Kleinberg and his colleagues study games inspired by such positive externalities in opinion formation. During my STSM to Salerno, we generalized the model by allowing voters to have both positive and negative externalities that can be expressed by Boolean constraints. The new general models turned out to be very interesting. We managed to prove that they are so expressive so that any game that admits a generalized ordinal potential in which each player has two available strategies has the same best-response dynamics with one game in our new class of opinion formation games. We also formulated a set of questions related to the price of anarchy and stability of particular subclasses of games; our purpose here is to extend the price of anarchy/stability results in the two recent papers by Kleinberg and his colleagues. We have already preliminary results in this direction and plan to continue working on the problem, possibly exploiting another COMSOC STSM.