

COST Action IC1205 on Computational Social Choice: STSM Report

Applicant: Ioannis Boutsis

Home institution: Athens University of Economics and Business

Home country: Greece

Host: Dr Jia Yuan Yu

Host institution: IBM Research

Host country: Ireland

Dates: 08-01-2015 to 17-01-2015

Purpose of the STSM:

The purpose of this visit was to work with Dr Jia Yuan Yu on the problem of developing a fair mechanism to provide incentives for crowdsourcing environments, during emergencies, so as eliminate malicious behavior and motivate users to respond with truthful and fast responses.

Description of the work carried out:

In terms of the collaboration with Dr Jia Yuan Yu, we have made very good progress on the project of developing a mechanism that rewards the human workers in a way that maximizes the amount of reliable responses provided with a small delay and to exclude the malicious workers and spammers. We modeled the mechanism that considers both the system's and the human workers utility in terms of response quality and monetary rewards. Our mechanism has a pricing policy that depends on the (i) quality, (ii) delay and (iii) spamming behavior of the user responses. We also formulated the cost functions in order to define the optimal point for a worker to respond to a task as a time-dependent function. Also, we discussed how to exploit the feedback received by the users to alter the pricing policy of our mechanism by adjusting its parameters so as to maximize the expected fast responses for an event in a game theoretical way.

To conclude, this visit was very fruitful, providing the opportunity of a collaboration that will eventually produce important contributions.

Future collaborations and foreseen publications:

The applicant and the host will continue to work on this problem to achieve a publishable body of experimental results and prepare a joint publication.

I also met some of the members of IBM Research conducting research in same or similar areas and exchanged ideas that can lead to collaborations and publications in additional research works.

Finally, I would like to thank the STSM committee for giving me the opportunity to visit Dublin and work with Dr Yia Yuan Yu.