

e-Social Science development in Taiwan: Scalable social simulation using commodity computing

In this paper, we are going to describes the development of an agent-based modeling and simulation on social science researches. In the project funded by EUAsiaGrid, we've done the model construction and studied the way to utilises multiple CPU cores. This project aims to build up social simulation models on several application domains, including models of demographics and migration in Taiwan, and the electorate voting model for political science. We developed an example model that utilises multiple CPU cores and investigate the scalability of the resulting code on the gLite-based e-Infrastructure. The feasibility study and stability analysis of the model has been carried out. We argue that commodity compute resources and commoditised simulation frameworks can now be used to simulate real-world populations and to investigate social phenomena such as migration. In addition, an empirical neural network model was also developed for the voting behavior modeling based on social network.

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