



Séminaire du CIRRELT Seminar

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NEW DIRECTIONS IN POPULATION SYNTHESIS FOR MICROSIMULATION OF URBAN SYSTEMS

ABSTRACT: With the increase in behavioural richness and complexity related to microsimulation of urban systems, the requirements for more detailed individual agent level data synthesis are increasing. On the other hand, there is an alarming trend among the governments towards reducing the scope of Census and other vital data collection efforts. Furthermore, with the overwhelming presence of web2.0 in our daily lives, newer data sources are becoming available. The conventional synthesis approaches, for instance, iterative proportional fitting (IPF) are not able to adequately address these changing trends, challenges, and opportunities. In this context, we present a new approach for population synthesis where agents are generated using Markov chain Monte Carlo simulation. The associations among different types of agents (households, persons) are synthesized by reducing the problem into a maximum-weight matching of a bipartite graph. The proposed methods were developed and tested on Swiss and Belgian Census. Our experiments revealed that the simulation-based approach consistently outperformed the IPF in reproducing the joint distribution, while using at most the same or lesser amount of information as IPF.

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JEUDI / THURSDAY

12 décembre 2013 /
December 12th, 2013

10h30

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer
Bernard Gendron



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