Researcher - Smart Cities and Urban Mobility Simulation

Job ID: 2012-1

Location: Madrid, Spain

Job Type: Full Time

Context and background:

Urban transport is essential for citizens to perform their daily activities, but at the same time constitutes one of the major sources of urban pollution (GHG emissions, local air quality, noise), directly affecting citizens' health and well-being. The quest for sustainable urban mobility is a common and urgent challenge for all major cities around the world. Nommon investigates how to take advantage of smart city technologies and complex systems science to develop new models and tools empowering city governments and their citizens to design sustainable mobility policies. We seek to advance in three complementary directions:

1. Big data: the massive penetration of ICT is providing us with a huge amount of heterogeneous data, such as data from intelligent transport systems, Internet social networks, mobile phone call logs, or e-transactions. We investigate how to exploit these data to characterise mobility and location patterns in cities.
2. Urban transportation models. We seek to develop improved travel behaviour models and integrate them into state-of-the-art agent-based simulation tools.
3. Link between modellers and decision makers. We aim at developing tools (e.g. 3D visual analytics) facilitating stakeholders' interaction with the simulation results.

Job description:

The candidate will be part of a multidisciplinary team working in smart cities and urban mobility. His/her main responsibilities will be:

- identify and assess the main shortcomings and room for improvement of the policy assessment tools and methodologies currently in use in the field of urban mobility;
- investigate how new data available in the context of smart cities can be exploited to improve our understanding of mobility and location patterns in cities;
- develop enhanced travel demand models from the new data sources and integrate such models into state-of-the-art agent-based urban simulation tools;
- develop user-friendly tools to interact with the results of the agent-based simulations;
- contribute to the definition of innovative products, services, and business models in the field of smart cities and urban mobility.

Qualifications and skills:

Required:

- Master's Degree in Engineering, Physics, Mathematics, or any relevant scientific field.
- Excellent English and Spanish oral and written communication skills.
- Strong mathematical background.
- Excellent programming skills.

Preferred:

- Doctorate Degree in Engineering, Physics, Mathematics, or any relevant scientific field.
- Experience/knowledge in transportation and spatial planning.
- Experience/knowledge in transport modelling and simulation.
- Experience in algorithm design and application of mathematical models to real-world problems.
- Experience in programming in C, C++, or Java.
- Experience in collaborative R&D projects.

To apply for this position, please email your CV with a covering letter to nommon@nommon.es