



Shaping the Sydney of tomorrow

TransMob: A micro-simulation model for integrated transport and urban planning.

SMART Infrastructure Facility and Transport for NSW have collaborated on developing an interactive, visually intuitive and highly flexible simulation platform to support transport and urban planning in Sydney. In the resulting agent-based model, TransMob, simulation agents represent individuals and households living in an urban area.

The heterogeneity of this synthetic population is represented in terms of demographic characteristics, environmental perceptions (for example, traffic congestion, number of available facilities of various types available per person, availability and affordability of housing stocks) and decision-making behaviours.

Inherently, the simulated population will evolve over time facilitating the interactions between dynamics of residential relocation of households, transportation behaviours, and population growth. The 'agents' age, start work, marry, have children, etc., and their changing needs can be identified.

Thanks to this feature, the model can be used for exploring long-term (for example 20 year time horizon) consequences of various transport and land use planning scenarios. Therefore, it can assist in informing key decisions about investment and policy.

The simulation workflow includes an agent-based model (RePAST) and a micro-simulation traffic model (TRANSIMS). In order to view the outputs, a YellowFin based platform is included for the visual interface.

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TEAM

- Dr Nam Huynh (Project lead)
- Dr Matthew Berryman
- Professor Peter Campbell
- Mr Vu Lam Cao
- Dr Jun Ma
- Professor Pascal Perez
- Dr Nagesh Shukla
- Dr Jack Yang

PARTNERS

- Transport for NSW

PUBLICATIONS

- Barthelemy, J 2016, 'Household allocation', in R Lovelace & M Dumont (eds), *Spatial Microsimulation with R*, CRC Press, Boca Raton, pp. 171-182.

Contact us for more information

PROFESSOR PASCAL PEREZ

Director

Ph: +61 2 4252 8238

Email: pascal_perez@uow.edu.au

MS TANIA BROWN

Chief Operating Officer

Ph: +61 2 4298 1431

Email: tania_brown@uow.edu.au

 SMART Infrastructure Facility

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