Consumer Data Research Centre

Masters Dissertation Scheme Project form

Company / Organisation Name:	Space Syntax Ltd
Team / Department:	RND
Address:	81 Rivington Street, London, EC2A 3AY

Provisional title for project:

Developing a new multi-scale street network centrality indicator to explore the movement economy (land-use-movement-spatial-transport relations) in London and other cities.

Short description of the problem that would be addressed by the project:

Space Syntax is a set of theory and techniques developed at UCL Bartlett Space Syntax Lab that studies the relation between the street network configuration and society. A key concept is the theory of the movement economy which posits that spatial configuration and land use are associated via natural movement. The aim of this research project is to develop new spatial centrality indicators to further explore/validate the theory of movement economy (land-use/movement spatial relations) at scale in London and possibly other cities.

Space Syntax Ltd, a spin-out of UCL Bartlett School of Architecture, has developed a set of novel algorithms to measure multi-scale centrality, which accounts for both local and global relations, which this project will leverage and build upon. To develop this new metric we envisage that there are two initial approaches that could be explored and interrogated; 1. A heuristic approach based on theory/experience/literature and 2. A statistical data-driven approach based on unsupervised clustering. Finally, a configuration-land use-movement correlation would be tested as a validation of the movement economy at scale to test both approaches.

Short description of the data sources that would be used in the project, and how they would be used

Space Syntax models of existing cities, potentially requires the creation of new models leveraging on openstreetmap data.

Would any work by the student need to be carried out on site at the Company (with the exception of supervisory Meetings)?

It would be good if the student could spend some time in the office to benefit from informal knowledge sharing

Any issues of data confidentiality and IPR that would need to be resolved

All model data is SSx IP, we would like to own the outputs of any new measures that are developed

Essential skills

GIS

Desirable skills

Statistical skills, python

Preferred degree programmes (if any)

Social and Geographic Data Science, Urban Analytics, Smart Cities, Space Syntax, GIS

Preferred selection method

Interview either online or in person

Support and training offered by the company

Introduction to Space Syntax theory and techniques

Financial assistance offered by the company

£500 stipend

Any other comments

If there are any questions about the 2024 programme, please contact Richard Arnold at richard.arnold@ucl.ac.uk. The completed form should also be returned to this address.