Masters Dissertation Scheme
Project form

Company / Organisation Name:	CARTO
Team / Department:	Data
Address:	CARTO, Gran Via 46 (Palacio de la Prensa), Planta 2, 28013, Madrid, Spain

Provisional title for project:

Mapping Cities as Flows: An evaluation of mobile app-based trajectory data for the modelling of origin destination flows

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

There are a wealth of opportunities to study the dynamics of human movement within cities through the use of new forms of data derived by mobile phone applications. Through the collection and bundling of multiple digital location traces that are generated as a biproduct of mobile phone application use, there is great potential for these data to be transformed into insight about how people use and flow through our cities over time.

The student successfully assigned to this project will be utilising raw location signal data from various app data providers through the CARTO platform. This data will be processed to generate origin destination flows, infer the mode of transportation, and/or identify most common routes by reconstructing trajectories

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

Data consisting of raw location signals captured by mobile app SDKs will be provided through the CARTO platform from one or more different mobile app data providers. Such data would be analysed using SQL and Python. Student will work with CARTOframes (https://carto.com/developers/cartoframes/) and also with Google Cloud Platform technologies

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

All work will be remote

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

NDAs would need to be signed to access the technology and the 3rd party data

Essential skills

Knowledge of spatial analysis, Python, SQL

Desirable skills

Experience with Big Data tools

Preferred degree programmes (if any)

Computer/Data Science, GIS

Preferred selection method

CV review and online interview

Support and training offered by the company

Kick-off session to present data, platform, and goals. One hour meeting every week to review general progress and code with a Data Scientist. Direct contact with the Data Science team through Slack to discuss blocking issues

Financial assistance offered by the company

The organisation will pay the honorarium (£500)

Any other comments

Origin - Destination matrix calculation is a hot topic in the Big Data and Spatial Data Science world. Successful students will have the opportunity to work with real data on a very impactful project, while being mentored by experts in Spatial Data Science

For details on how to apply, please visit:

www.cdrc.ac.uk/education-and-training/masters-dissertation-scheme/