

CASA dissertation proposal form 2021/22

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First name *

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You

Select your programme *

MSc Spatial Data Science and Visualisation



Have you read the dissertation handbook on moodle? *

☒ Yes

Potential supervisor (first choice) *

Andrew MacLachlan ▼

Have you contacted this supervisor? *

☐ Yes

☒ No

Potential supervisor (second choice) *

Huanfa Chen ▼

Are you planning to apply for a numbered project on the Moodle or have applied for CDRC? *

☒ Yes, I wish to apply for a numbered project

☐ Yes, I applied for CDRC

☐ No, I have my own project plan

Numbered projects

Numbered project: What project number are you applying for? Write the number only *

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Numbered project: Why do you want to do this project? 200 words *

The "15-minute city" is a fascinating concept. My hometown of Beijing is a very congested city where urban facilities (medical, consumer, entertainment, etc.) are not spread out, resulting in people spending a lot of time in traffic to reach the destinations that provide services, such as medical appointments. I find similarities between London and Beijing in this regard, so I am interested in this research question. just like urban agglomerations, cities need to be decentralized into different satellite areas within the city, which can enable people to do most of their work, life, etc. within this area, which can reduce traffic pressure and improve people's happiness. there is already a related evaluation system in TFL, it is PTAL, and I am interested in this evaluation system I am very interested in this evaluation system, and I hope to understand it and improve it.

Numbered project: Please comment on the data and methodology you will use (optional)

The evaluation system PTAL will first be carefully studied, and then questionnaires may be distributed and literature reviewed to understand what influences people to travel long distances within the city and to try to consider how to reduce travel time and optimize PTAL. The main data may include publicly available data on housing prices, residential travel, etc.

CDRC

CDRC project: Title *

CDRC project: Outline (and any link) 200 words *

CDRC project: Supervisor name and email, if available

CDRC project: Has your application been: *

- ☐ Accepted
- ☐ Declined
- ☐ Dont know yet

Project

Own project: What is the proposed title of your project? *

Own project: What is the proposed research question? 50-100 words *

Own project: Give a short summary of existing literature on the topic including references (200 words) *

Own project: What are the proposed methodologies? *

Own project: What is the proposed data? Where will you get it? *

Own project: Give a summary of the analysis you plan to carry out (200 words) *

Own project: If there is a project partner (eg company) involved, list them and their email here

Own project: Are you planning on conducting any field work? *

☐ Yes

☐ No

Own project: If yes or maybe, outline which UCL forms you will need to submit. Consult:
<https://www.ucl.ac.uk/safety-services/a-z/off-site-working>

Own project: What ethical considerations will consider within your research (100-200 words)? *

Own project: Will you need ethical approval? *

- ☐ No
- ☐ Yes, low risk
- ☐ Yes, moderate/high risk
- ☐ I don't know

Plan B project

This is your back-up project if not selected for a numbered project or CDRC project

Plan B project: What is the proposed title of your project? *

Using spatial analysis to estimate the potential of micro-consolidation delivery hubs in London

Plan B project: What is the proposed research question? 50-100 words *

1. Calculate appropriate metrics (e.g. population per location) for the existing network of micro-consolidation delivery hubs in London; 2. Try to give specific plans or suggestions for the placement of micro-distribution stations

Plan B project: Give a short summary of existing literature on the topic including references (200 words) *

The project was inspired by TFL's proposal for Project 21.

(https://moodle.ucl.ac.uk/pluginfile.php/3815141/mod_folder/content/0/Project_21_TFL.docx?forcedownload=1)

In the Mayor's Transport Strategy, a key proposal relevant to freight is to improve the efficiency of last-mile deliveries. This is due in part to the increasing number of vans (or Light Goods Vehicles) in London and the increasing competition for road space. Furthermore, there are critical environmental and safety targets that need to be met in London and road freight has a disproportionate impact on both.

One of the ways to improve the efficiency of last-mile deliveries is to introduce micro-consolidation delivery hubs (such as parcel lockers and 'click and collect' shops) to try and deter people getting parcels delivered straight to their home.

Whilst there is general acknowledgement that getting a parcel delivered to a shop or locker is 'greener', there is currently limited evidence of the potential benefits at a spatial-level (e.g. in terms of van kilometres saved and emissions reduced) and where they should be located to optimise the potential benefits.

The broad aims of this project would be to:

- Calculate appropriate metrics (e.g. population per location) for the existing network of micro-consolidation delivery hubs in London

Plan B project: What are the proposed methodologies? *

Use operational research methods (e.g. location-allocation in ArcGIS) to determine the potential number of micro-consolidation hubs needed in a study area (e.g. central London) to satisfy certain criteria (e.g. x% of the working population are within x minutes or metres).

Plan B project: What is the proposed data? Where will you get it? *

Public data: including publicly available map data, number of residents at low geographic levels, number of convenience stores, etc.

Additional data: TFL has some project work base and would like to get data related to their preliminary research

Plan B project: If there is a project partner (eg company) involved, list them and their email here

TFL, not yet communicated

Plan B project: Give a summary of the analysis you plan to carry out (200 words) *

The outputs could provide valuable insight to TfL and help inform its strategy to improve the efficiency of last-mile deliveries and reduce freight traffic in London.

Plan B project: Are you planning on conducting any field work? *

☐ Yes

☒ No

Plan B project: If yes or maybe, outline which UCL forms you will need to submit. Consult: <https://www.ucl.ac.uk/safety-services/a-z/off-site-working>

Plan B project: What ethical considerations will consider within your research (100-200 words)? *

Potential ethical issues that may need to be considered include the potential privacy risks associated with the collection of information on residents picking up delivery packages through questionnaires.

Plan B project: Will you need ethical approval? *

☐ No

☒ Yes, low risk

☐ Yes, moderate/high risk

☐ I don't know

General questions

Are you aware of the penalties for poor academic practice or academic misconduct.
Consult the UCL academic manual, Chapter 6, section 9? *

☒ Yes

Have you joined the slack dissertation channel? *

☒ Yes

Do you have access to the CASA0004/0010/0012 Moodle page? *

☒ Yes

Are you aware of the submission deadline of 5pm, Monday 22nd August via the Moodle
submission link? *

☒ Yes

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