Dissertation Topic Outline Form

Please complete each question.

1 ❗ Name:

> Minwei Zhao

2 ❗ What is your student number? [This is an 8 digit number, available through Portico]

Do not use thousands separators.

> 22032089

3 ❗ **MSc programme:**

> Remote Sensing & Environmental Mapping

4 ❗ **Proposed dissertation title [100 characters max]:**

> Apply unsupervised graph neural network methods on the street network into identifying urban morphological...

5 **Proposed field research location (if applicable):**

> None

6 ❗

Technical/methodological approaches you are likely to use:

- ☑ Advanced statistics
- ☐ Analysis of existing (secondary) data (e.g. global datasets, climate records)
- ☐ Analysis of press and new media
- ☐ Archival/visual methodologies
- ☐ Discourse analysis
- ☐ Ecological field surveying
- ☐ Focus groups
- ☑ GIS
- ☐ Lab-based ecology (i.e. microscope work)
- ☐ Lab-based water and sediment analyses (e.g. chemistry, grain size)
- ☑ Modelling
- ☐ Participant observation/ethnographic methods
- ☐ Policy review
- ☑ Remote sensing
- ☐ Semi-structured interviews
- ☐ Social surveys
- ☐ Unix/Linux computing

7 **Summary of specific equipment or laboratory requirements (if applicable) [100 characters max]:**

> No specific equipment required; computational resources for data analysis suffice.

8 ❗ **Proposed dissertation abstract [300 words max]. Specifically, please outline your main aim and objectives:**

Applying unsupervised graph neural network methods to UK cities' street networks, this thesis aims to categorize urban morphological types, leveraging GIS and remote sensing data. It explores the potential of GNNs to discern complex spatial structures within urban environments, seeking to understand and quantify urban form variations. This research stands to contribute significantly to urban planning and policy-making by providing a novel, data-driven perspective on urban morphology.

9 ⚠ **Is this project linked to a specific member of staff?**

🔘 Yes   ⚪ No

10 **If yes, who?**

Dr. Stephen Law

11 **If the project has been listed by a particular member of staff, have you spoken to them about the project and received their permission to select it?**

🔘 Yes   ⚪ No   ⚪ No answer

12 **Is this project linked to a specific external organisation?**

⚪ Yes   🔘 No   ⚪ No answer

13 **If yes, who?**

14 ⚠ **Suggested supervisor:**

Dr. Stephen Law

NB: We cannot guarantee that you will be assigned your suggested supervisor.

Close this window