Dear Colleagues,

I would appreciate it if you could pass on this NERC DREAM-CDT funded PhD position in urban resilience for shrinking cities and big data to those you think might be eligible or interested.

All the best,

Zhaoya Gong

Topic: Building resilient cities in the shrinking paradigm: A UK and China comparison using new sources of big data

Funding eligibility: Funding is available for UK residents (fees + stipend) and EU residents (fees only).

Application closing date: August 15, 2018

Project description: Urban shrinkage is a common phenomenon throughout the world despite urbanisation being a well-established trend. With increasing globalisation, cities in both developed and developing counties experience economic downturn, population decline, de-urbanisation. Reasons and solutions of urban shrinkage have been discussed and documented extensively for developed countries (e.g. UK, US, Germany, and Japan). However, deeper understanding of urban shrinkage issues and how to resolve them in the developing world, especially in China with a large number of fast growing cities, is still lacking. Insights from developed countries could be learned in order to better address the challenges for building resilience into shrinking cities of the developing world. Northeast China provinces, including Liaoning, Jilin, and Heilongjiang, now known as the "rust belt" in China, have topped the chart in the number of shrinking cities due to resource depletion, deindustrialization, and demographic changes. Similarly, most of the top UK declining cities are in the north of England as a strong indication of the North-South divide. Core cities of North England, such as Liverpool, Manchester, Leeds, Sheffield and Newcastle, share some common characteristics with their counterpart in Northeast China in terms of industrial legacy, aging population, and loss of growth power to support surrounding areas. Insights could be gained for those cities in both countries by a comparative study of their resilience to internal and external changes.

With a focus on Northeast China cities, this project seek to 1) identify and better understand the spatial, economic and social issues of shrinking cities and the underpinning mechanisms in relation to other Chinese cities, and 2) design adaptive strategies to build resilience into these cities through a comparative study of urban shrinkage in China and UK. This project will expand the existing research by combining the spatial, economic and social dimensions of human mobility and urban interactions and considering the interplay of all three dimensions in defining a multidimensional measurement and assessment of urban resilience. Furthermore, this project will promote the collaboration between the UoB research team and the Chinese stakeholders in order to incorporate local interests and benefit decision-makers with both general and place-based strategies in policy-making.

This project will facilitate the identification and acquisition of various traditional and novel sources of data, which can be leveraged them to gain better insights by leading-edge big data analytics and AI techniques. The substantive and methodological knowledge that this PhD project will generate will directly contribute to the UK Industrial Strategy Grant Challenge of Artificial Economy and the Data Economy as well as on the Key Policies on Infrastructure and Places. Moreover, this PhD project will contribute to the research objectives of the Alan Turing Institute, which the University of Birmingham recently joined. The latter signifies the broader recognition of AI and the Data Economy as a research priority for the University of Birmingham.

Qualification: Applicants should hold a minimum of a UK Honours Degree at 2:1 level or equivalent in subjects such as Geoinformatics, GIScience/Geocompuation, Transport Planning, Civil Engineering, Geography, Environmental Science, Computer/Data Science or Urban Planning. Applicants with skills in quantitative modelling or Python/R programming are preferred.

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·   Supervisory panel: Dr Zhaoya Gong (Birmingham); Dr Emmanouil Tranos (Birmingham)

Application procedure: http://www.dream-cdt.ac.uk/studying/application/