Digital Technologies and the Green Transformation in China

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The research proposal
This project seeks to examine the synergies between digital and green transformations in China. On the one hand, the high-profile strategy of the 'ecological civilization' is a major driver of green transformation in areas of green consumption, low carbon industry and renewable energy. On the other hand, hand China has by now become known as a digital superpower with core areas of strength in artificial intelligence, the internet of things, blockchain and big data analytics. But to what extent, how and in which areas is the adoption of digital technologies speeding up or changing the direction of the pathway towards ecological civilization? These are the high-level questions the project seeks to investigate.

Techniques to be used
This project will not only examine new and emerging digital technologies but will also apply computational social science methods in examining the links between green transformation. Examples of methods that can be used are: (a) big-data analytics to examine difference between digital technology adopters and non-adopters in the green economy, (b) agent-based modelling to model of green transformation processes with different degrees and types of digital technology use, (c) use of semantic topic modelling techniques to examine whether and how digital technologies changes the nature and direction of green innovation or (d) machine learning techniques for designing information systems for energy production and use.

Institutional collaboration
The PhD candidate will be placed UNU-MERITs newly established Computational Innovation Lab and will benefit from interaction with other data-science experts.[1] At the same time, the student will be steered by a supervisor team in both Netherland and China and will receive a double degree from Maastricht University and Tsinghua University, provided that an institutional agreement can be reached.

Requirement:
- Highly motivated student with good English communication skills.
- Background (at the level of M.SC) in economics, management, or a relevant field.
- Knowledge in environmental economics and sustainable development.

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[1] See https://www.merit.unu.edu/the-computational-innovation-lab-on-crises-transformation-and-sustainable-development/

- Excellent skills in computational research methods

Priority areas

This project relates to the following priority areas recommended by the Chinese government in the National Medium- and Long-term Program for Talent Development (国家中长期人才发展规划纲要, 2010-2020):

- 能源资源 / Energy Resources
- 生态环境保护 / Eco-Environmental Protection

And also the areas in the Medium and Long-term Science and Technology Development Plan (国家中长期科学和技术发展规划纲要, 2006-2020) :

- 能源 / Energy
- 环境 / Environment
- 人类活动对地球系统的影响机制 / Human Activities and Their Impact on the Earth System
- 全球变化与区域响应 / Global Change and Regional Response
- 能源可持续发展中的关键科学问题 / Key Scientific Issues in Sustainable Energy Development

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