2023/2024 CASA MSc Dissertation Partner Project

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Partner organisation: IPSOS

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Project title: Understanding neighbourhood improvement using street level images

Outline: Levelling up prosperity and opportunity across the UK is one of the key aims of Government. However, understanding what investments work to address sustained geographical inequalities can be challenging, and often relies on subjective measures of wellbeing. In an urban context, recent improvements in computer vision models and the availability of large-scale images offer novel approaches to measure neighbourhood improvement.

The aim of this project is to explore the application of computer vision models to assess neighbourhood improvement in English cities, focussing on 1-2 cities as case studies. London may serve as a baseline for model performance, as extensive work has been undertaken comparing change between different London neighbourhoods.

Data: temporal street level images

Possible methodologies: Barlow Twins, ViT, SVM regression

Relevant literature:

Naik N, Kominers SD, Raskar R, Glaeser EL, Hidalgo CA. Computer vision uncovers predictors of physical urban change. Proc Natl Acad Sci U S A. 2017 Jul 18;114(29):7571-7576. doi: 10.1073/pnas.1619003114. Epub 2017 Jul 6. PMID: 28684401; PMCID: PMC5530649.

Stalder, Steven, et al. "Self-supervised learning unveils change in urban housing from street-level images." *arXiv preprint arXiv:2309.11354* (2023).

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I prefer to meet\*:

* flexible

\* This is not binding, but intended to help best match student and supervisor based on meeting preferences