**Max Nathan / dissertation ideas, 2020-2021**

**1/ Covid-19: mobility, job exposure, home exposure and spread of the virus [difficulty: 3 or 4/5]**

This would involve combining public health datasets, labour force info and mobility data from e.g. Google / Apple to look at links between workforce characteristics, movement and health outcomes. Datasets would be sourced mainly from the web and some further cleaning / matching would need to be done.

Extension 1: following [Glaeser et al 2020](https://www.sciencedirect.com/science/article/pii/S0094119020300632?via%3Dihub), and depending on the student’s programming/econometric experience, we could explore using IV estimation to identify causal linkages between mobility and virus case rates.

**2/ Future tech clusters in the UK [difficulty: 3 or 4/5]**

Descriptive analysis identifying co-location patterns and, possibly, linkages between firms. This would use a very large, structured + cleaned, firm-level dataset combining administrative and novel text-based data sources (10+m observations, ~3m firms). We would try out a range of clustering metrics based on pre-given industry/area typologies and more cutting-edge / data-driven approaches e.g. DB-SCAN and similar.

Extension 1: for some subsets of firms, and depending on the student having the programming experience, we could also explore text-based routines for identifying industry / product space. Again,

**3/ Urban public policy impact evaluation [difficulty: 3/5]**

More open-ended idea: I’d be interested in discussing how to impact-test specific urban policies that students are interested in. Here is [a recent example of mine](https://www.sciencedirect.com/science/article/pii/S0048733320302134) (see also [this coverage / backstory](https://www.wired.co.uk/article/silicon-roundabout-tech-city-property) in Wired UK).