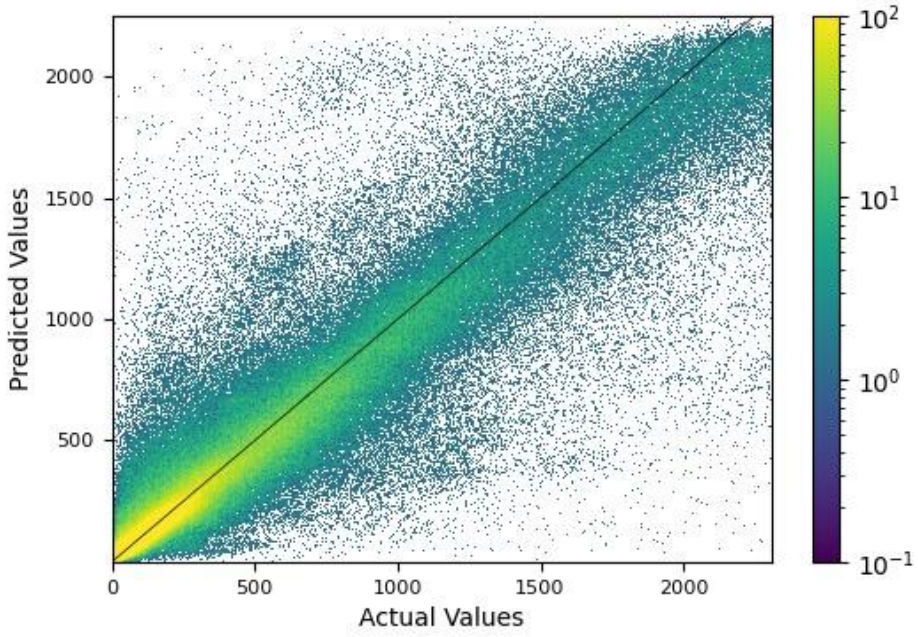
Predicting Pedestrian Counts using Machine Learning

Designing ***functional cities*** requires understanding of the ***mobile population***

- **Data** on this population is **scarce**
- The population exhibits **non-linear** behaviour and so is difficult to capture



Can we use machine learning to better understand this population?

- **Random forest regression** model of the pedestrian population in Melbourne
- Data from **footfall sensors** and **contextual factors**: weather, date/time, built environment

Molly Asher, Yannick Oswald, Nick Malleson

UNIVERSITY OF LEEDS

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Machine learning models:

- learn (**generalisable**) patterns/relationships from training data
- apply these to make predictions on unseen data

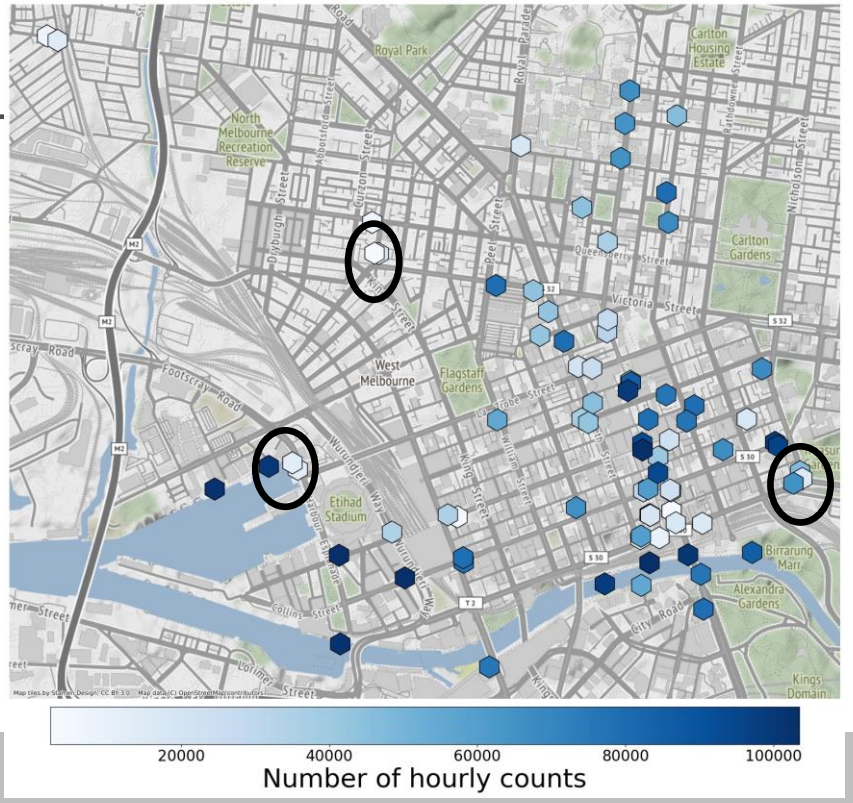
BUT: Need to avoid overfitting

CHALLENGES: Spatial data leakage

- Spatially correlated points in both testing and training
- Invalidates assumption that testing data is new and unseen

Solutions?

- Ensure correlated sensors are not split between testing and training sets – how?



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