**Thesis Draft**

**Abstract**

**Table of Contents**

**Introduction**

* + Development of project background and aims

Air quality modelling tools are often a myriad of input data files in varying format types and require an in-depth knowledge of the different parameters to be able to conduct a simple estimate of concentrations at a given point. Topography, meteorology, traffic, road layout, building layout, dispersion, all have an impact on air quality concentrations.

* + Context and discussion of existing tools

**Exploratory Analysis of Open Data**

* + Exploration of available open APIs/data sources
    - Python friendly HTTPS based APIs or other database integrations required?
  + Geospatial analysis of data sources to ensure sufficient coverage.
  + Transformation of data required?
  + Summary statistics of underlying datasets – building gheights/topography/road lengths/air quality data.

**Web Framework Development**

* + Exploration of Webapp framework suitability
  + Develop initial webapp prototype.
    - Design/Sketch expected user interface.
    - Code and implement webapp

**Methods and Functions Development**

* + Outline expected webapp functionality
    - Data integration methods
    - Data transformation methods
    - Data modelling methods

**Model Development and Validation Testing**

* + Explore and implement statistical/machine learning models based on webapp transformed output data.
  + Compare model outputs to real world air quality monitoring data.

**User Testing**

* + Implement user testing phase

**Deployment**

* + Describe and manage app deployment and Continuous Integration plan.

**Conclusion**