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# An automated demand forecasting model for new railway stations

DAFNI at Southampton :: 08 February 2021

Dr Marcus Young
Transportation Research Group

# What does the model do?


Individual station(s)

New line

Abstraction analysis

Catchment visualisation

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# A national trip end model with probability-based catchments

catchment

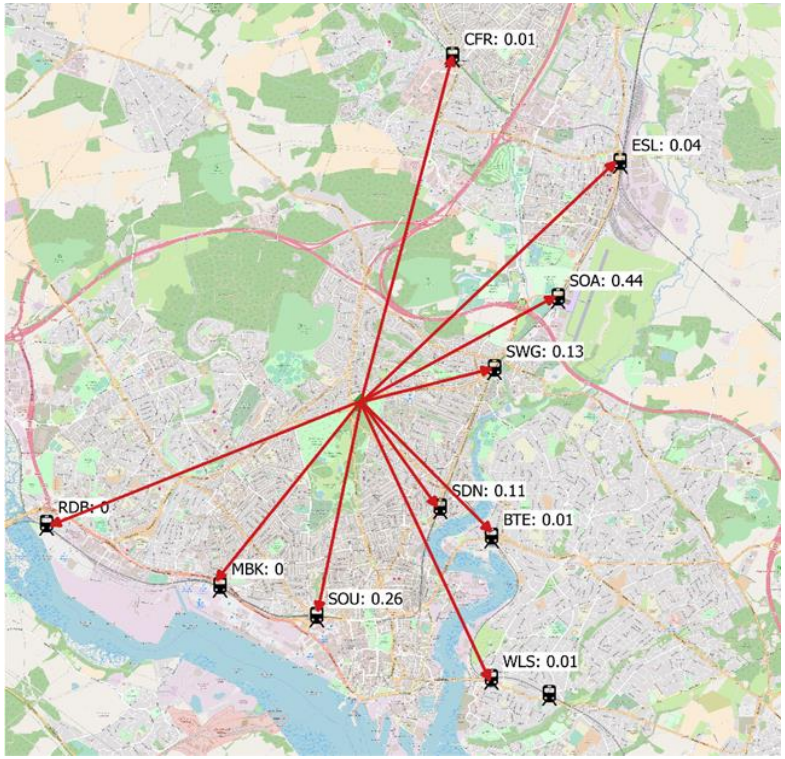
other predictor variables

$$\ln \hat{V}_i = \alpha + \beta \left( \ln \sum_{z}^{Z} Pr_{zi} P_z w_{zi} \right) + \gamma \ln F_i + \delta \ln J_{it} + \epsilon \ln Pk_i + \zeta Te_i + \eta El_i + \theta B_i$$

***V*** **- annual trips**

***Pr*** **- probability of station being chosen**
***P*** **- population**
***w*** **- decay function**
***Z*** **- postcodes with station *i* in choice set**
***z*** **- postcode**

***F*** ***- service frequency***
***J*** ***- jobs (within approx. 0.5 mile)***
***Pk*** ***- parking spaces***
***B*** ***- travelcard boundary (y/n)***
***Te*** ***- terminus station (y/n)***
***El*** ***- served by electric trains (y/n)***

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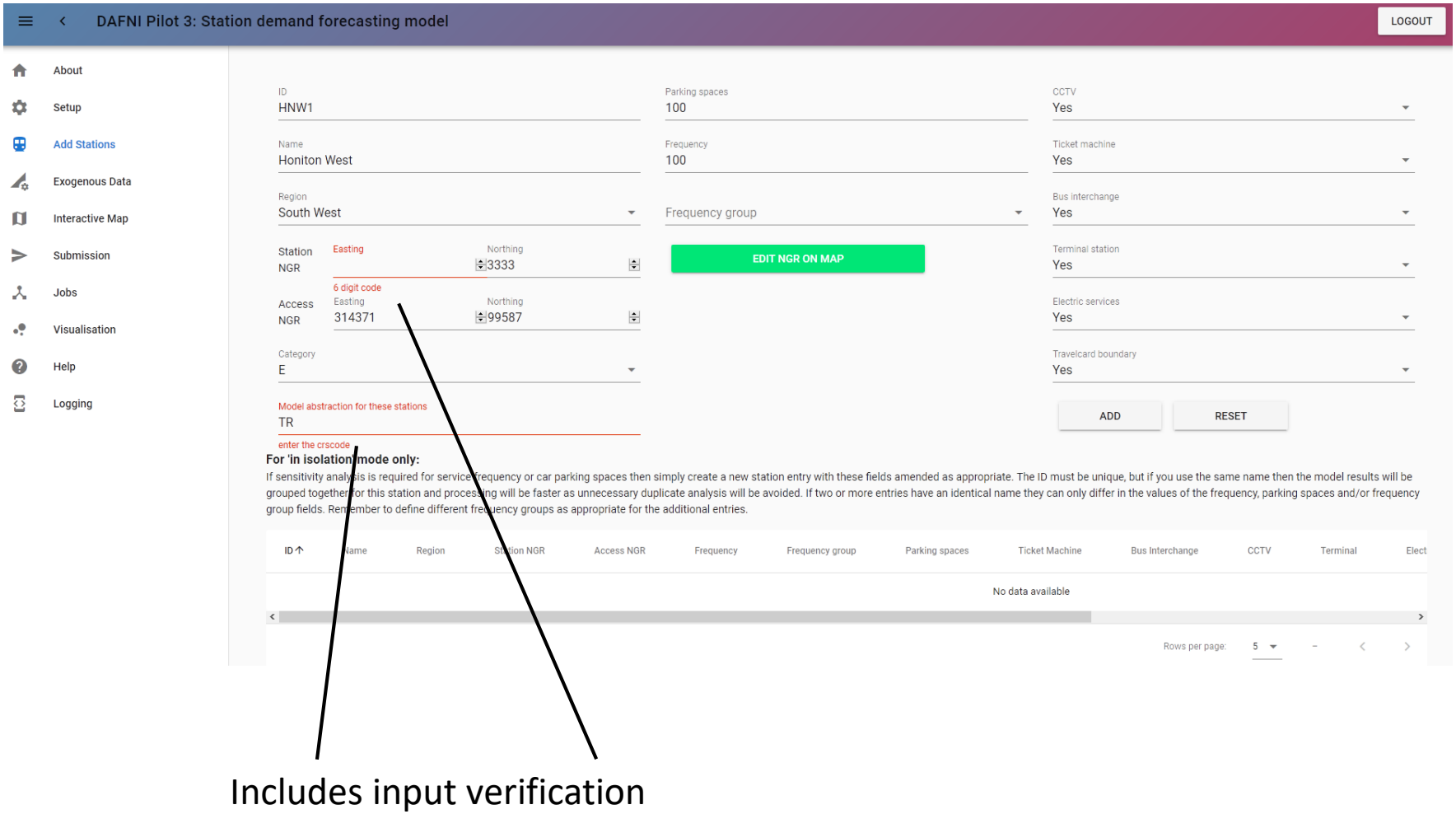
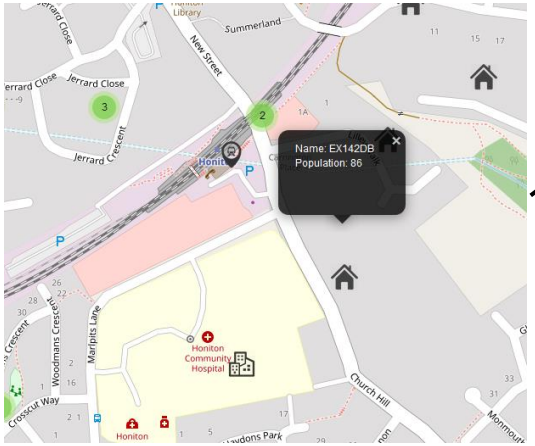
# Web app - job creation



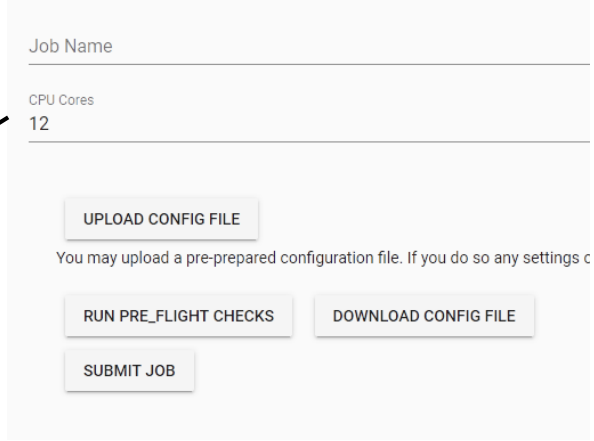

Includes input verification

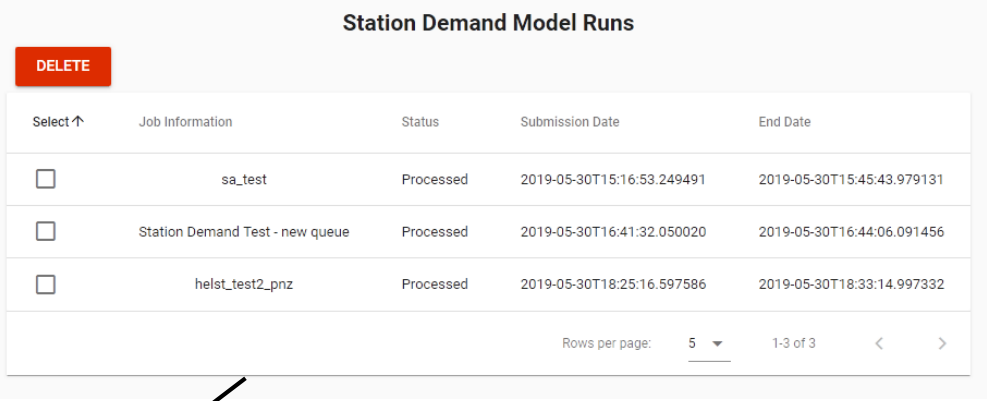
# Web app – job management



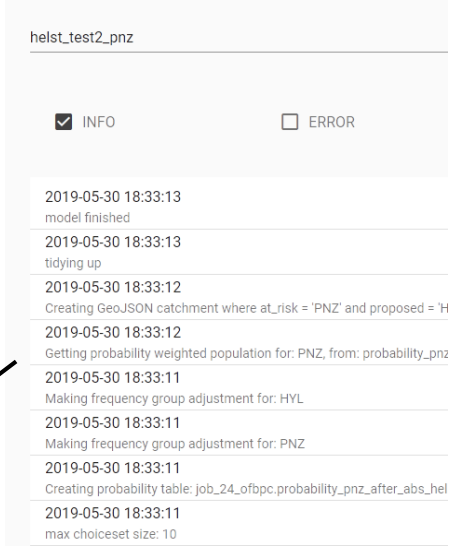

Interactive map

Job submission




Job management




Displaying log file

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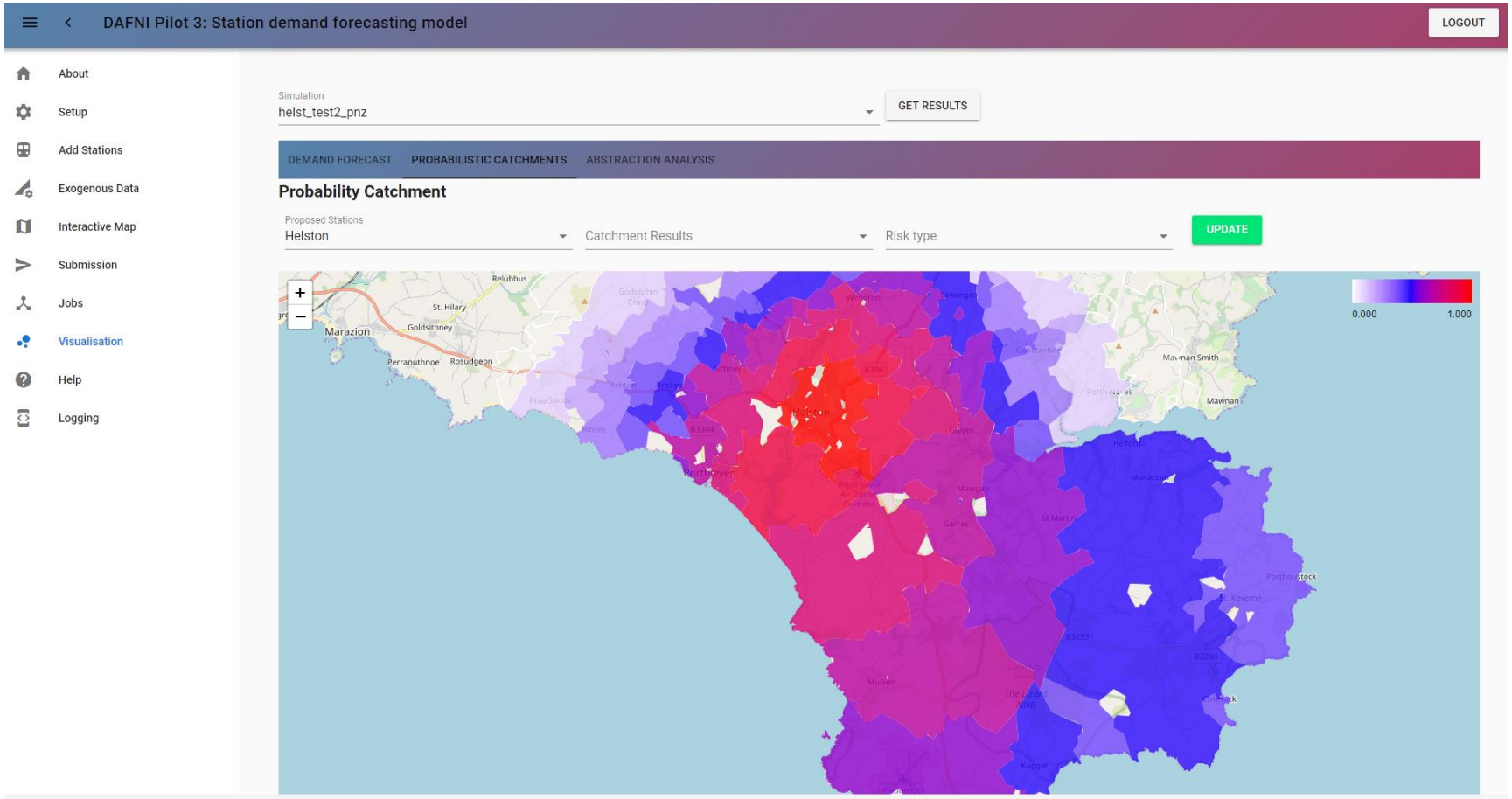
# Web app - visualisation

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# DAFNI has enabled rapid and effective sharing of the model


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