Train@Ed Fellowship
New data-intensive approaches to Tourism Forecasting

Tourism organisations do not have an accurate or up-to-date understanding of how many visitors are coming Edinburgh or the wider city region, when they are coming and where they are coming from. This lack of accurate data on the visitor profile makes it difficult for any tourism organisations to plan ahead – this includes allocation of resources, attracting investment. If we could use new and varied data sources and develop new methods to forecast the quantity and characteristics of visitors to the Edinburgh City Region, tourism organisations of all sizes will be able to make data-informed decisions.

We are seeking a Post-Doctoral Researcher within the School of Mathematics at the University of Edinburgh to lead on research to test and develop novel and scalable approaches to visitor forecasting in Scotland. The first part of this work will be to investigate the current and best methods used to forecast visitor numbers in comparator destinations and the different types of data used.

Initial exploratory analyses will likely focus on data from single attractions and their association with different forms of complementary available data such as social media, festival/events data, and alternative attractions. These will help motivate and develop the generalised regression models at the univariate level for incorporating different factors such as seasonality and temporal correlation in addition to identifying the relative importance of competing data for explaining the observed data (primarily visitor profiles). There are numerous challenges to consider with this research including, for example, identifying the temporal dependence structure, incorporation of covariates, and dealing with missing information. The approach will then be extended to the multivariate level accounting for multiple attractions or regional level.

The development of a visitor forecast model will initially focus on the Edinburgh and South East Scotland City Region. However, the proposed model approach is general - different types of regional level data can be inputted into the models and trained to the available regional data to provide associated visitor forecasts for different destinations in Scotland.

Essential:

- A PhD in a quantitative subject including, but not limited to, Statistics, Mathematics, Computer Science or a minimum of 4 years full-time equivalent experience
- A track record in data science research and experience of applying statistical and/or machine learning techniques
- Strong computational skills in a language such as R, Python, etc.
- Previous experience of interdisciplinary research and collaborating with others
- Demonstrable interest in applying and developing data science techniques
- Strong written and oral communication skills
- You must meet the eligibility criteria found here

Desirable:

- Experience of working with multiple forms of data and potentially large and incomplete datasets
- Practical experience of large regression problems
- Experience of data scraping and cleaning
- A track record of securing research funding
- Previous experience of working with tourism or related data
- Evidence of collaborating with industrial partners

If you would like to apply for a TRAIN@Ed Fellowship at the University of Edinburgh and would like to work with us to create a Tourism Forecasting project please contact Joshua Ryan-Saha [joshua.ryan-saha@ed.ac.uk] & Dr Gordon Ross [Gordon.Ross@ed.ac.uk] as soon as possible.

Informal discussions with potential applicants have been scheduled for the week commencing the 21st October.

Data-Driven Innovation