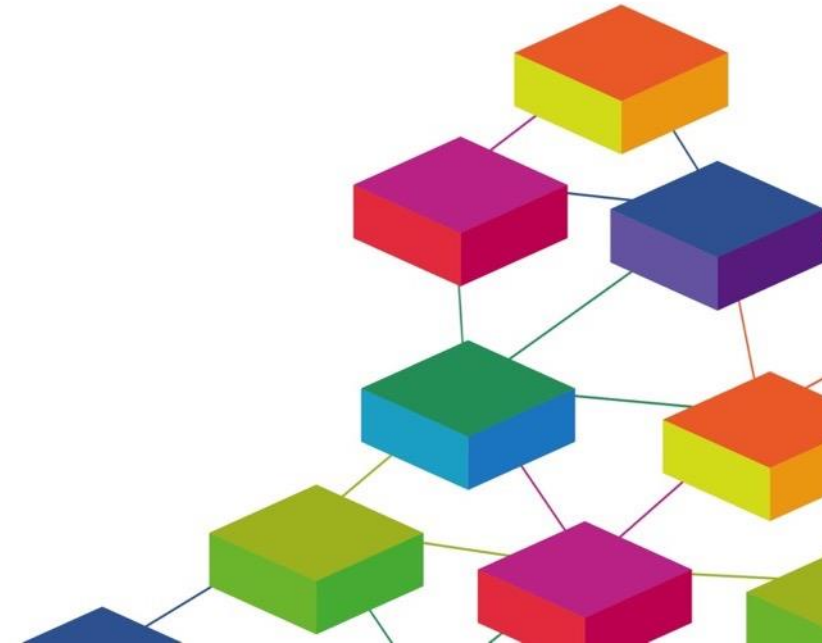


Celebrating collaboration: the CDRC Masters Dissertation Scheme

Dr Anastasia Ushakova (Alumni)
Consumer Data Research Centre 2015-
2019
Senior Research Associate, Lancaster
University



Background

- BSc (Hons) Economics, City University of London and Toulouse School of Economics
- MSc Public Policy, UCL – with Prof Jankin Mikhaylov and British Gas (CDRC)
- PhD (UCL CDRC) – with Prof Longley and Prof Jankin Mikhaylov

MSc Project Overview

- **Identifying Fuel Poor Customers using Smart Meter Data**
- Collaborator: British Gas
- Duration: 3 months
- First 1.5 month spent on site

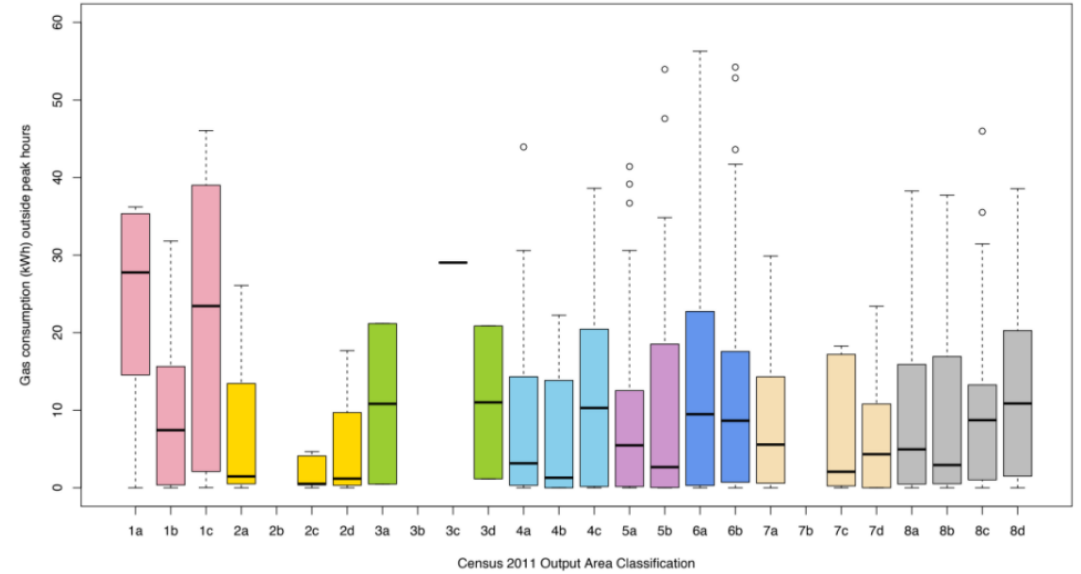
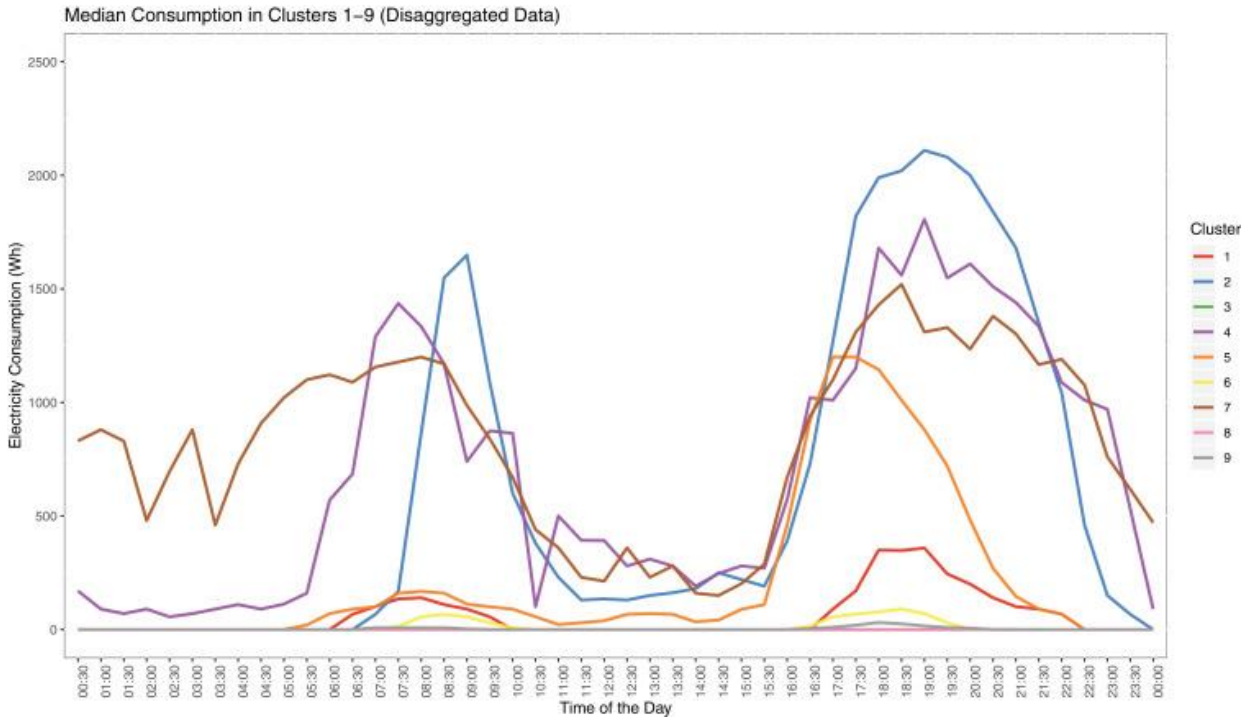
MSc Project Overview

- Brilliant way to get a bit of both worlds as a student (industry/academia)
- Early on grasp on challenges related to data and research
- In my case led to PhD that focused on extending the research from MSc...
- For others may lead to a post at the same or similar organization

PhD with CDRC

- **Generating Insights from Smart Meter Data: Challenges and Opportunities**
- A comprehensive overview of the data and methodological tools
- Impact beyond academia as a result
- + a set of transferrable skills would not have been otherwise gained in a traditional PhD

PhD with CDRC



Analysing Heterogeneity of Residential energy use in the UK
Ushakova and Mikhaylov (2020)

An attempt to link the energy use in peak hours to Census Geo-demographics
Ushakova and Murcio (2019)

Since then...

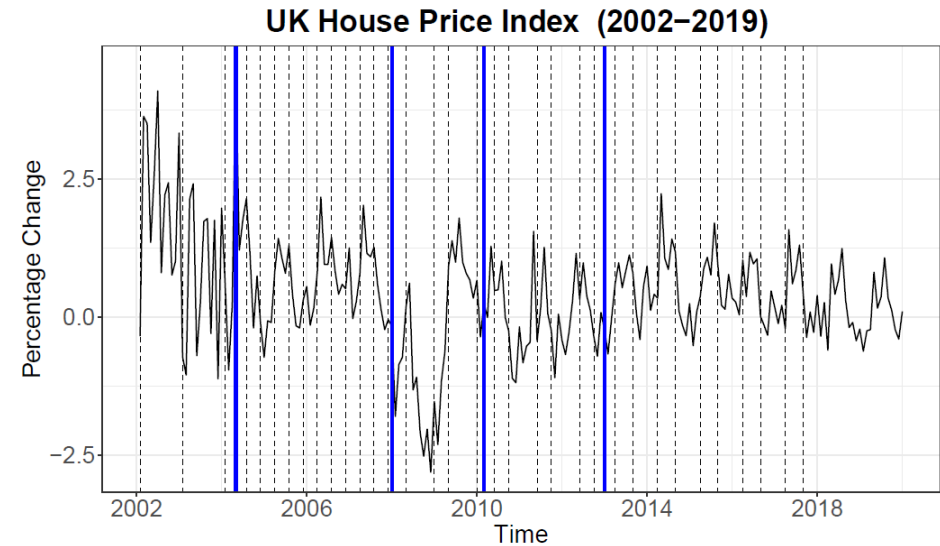
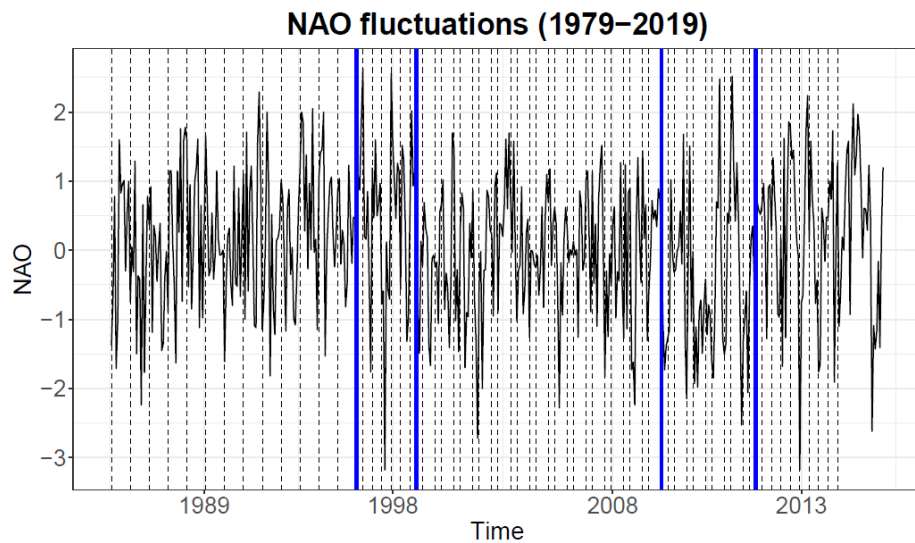
- Teaching post at University of Edinburgh (2018-2019)
- Provision of statistical training to various cohorts and backgrounds
- Working around developing curriculum that will prepare graduates for data driven positions
- Actively presenting at various data science conferences and engaging with local data science communities
- Before coming back to research in Jan, 2020

My current work

- Engaging in methodological and applied research
- Across a variety of fields and with other researchers (e.g. psychology, health research)
- Developing new statistical methods and open source software
- Evaluating existing methodology in application to large datasets (e.g. dynamic network models for longitudinal data)
- Application and development of methods for novel large datasets (collaboration with an industry partner in United States)
- Other things: missing data analyses and prediction
- Chair for Local Royal Statistical Society group

Current work: time series methods

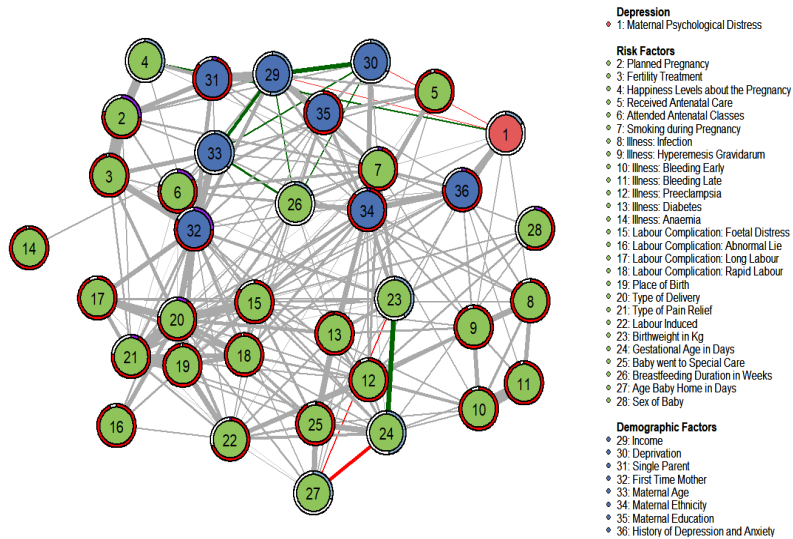
Multilevel changepoint models for time series



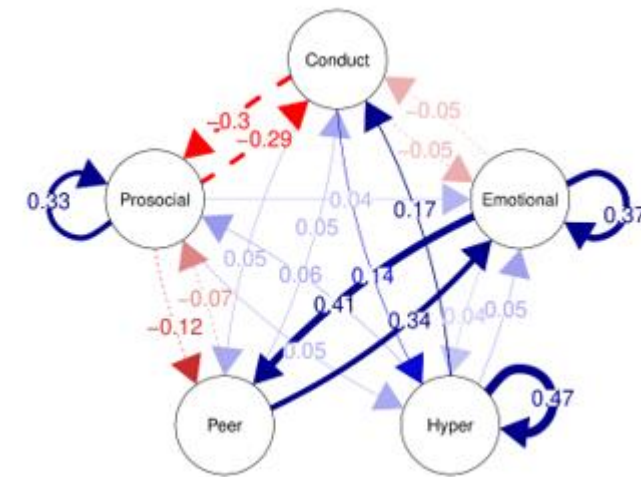
Multi-level changepoint inference for periodic data sequences
Ushakova et al (2021)

Current work: longitudinal data analysis

Application of advanced Structural Equation Modelling and Network Analyses techniques to longitudinal datasets



Network Analysis of Prenatal Experience and Mother's Distress. Speyer et al (2020)



Dynamic Analysis of Emotional Difficulties Speyer et al (2021)

Current work: digital app data

- Large scale dataset and collaboration with a company in United States
- We are working to study how children learn to read
- A combination of applied and methodological work given the novelty of the dataset
- Active knowledge exchange and international collaborations across Lancaster, Sussex, Pittsburgh, Leiden and Stanford

Summary

- Few lessons learnt
- Industry and academia can and should work together but **communication is the key!**
- **Cross-disciplinary** research can be **challenging** but **rewarding** at the same time
- Skillset obtained in such collaborations prepare well for both the future and the present that we know is **exceptionally data driven**

Thank you! + key references

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 @apavluhina

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Preprints

Speyer, L., Ushakova, A., Hall, A., Luciano, M., Auyeung, B., Murray, A. L., 2021, Analyzing Dynamic Change in Children's Socio-Emotional Development using the Strengths and Difficulties Questionnaire in a large UK Longitudinal Study. preprint DOI: [10.31234/osf.io/wz9xc](https://doi.org/10.31234/osf.io/wz9xc)

Ushakova A., Taylor S.A., Killick R., 2021, Multilevel Changeoint Inference for Periodic Data Sequences. preprint DOI: [10.13140/RG.2.2.35838.51526](https://doi.org/10.13140/RG.2.2.35838.51526)

