

# Martin Čadek

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*I am goal-oriented and ambitious statistics specialist and a skilled R user with a background in quantitative social psychology. I have an excellent working knowledge of regression modelling, clustering techniques, survey development, psychometrics, and applied research with health data.*

## Skills

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### DATA SCIENCE

- Exploratory data analysis, machine learning and regression analysis {caret, tidymodels, car, lme4}, data wrangling {tidyverse}, dashboard development {shiny}, data visualization {ggplot2, plotly}, classification {tidymodels}, computerised text mining {quanteda, tidytext}, continuous deployment {netlify}, reproducibility {markdown, renv, virtual environments}

### APPLICATIONS

- RStudio, Visual Studio Code, SPSS, Tableau, Excel, Qualtrics

### LANGUAGES

- R {ggplot2, plotly, Shiny, tidyverse, tidymodels, quanteda, tidytext, caret, car}, SQL {Postgre}, Git {GitHub, GitLab}, Python {pandas}, Markdown {R}, latex, CSS

## Experience

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### Assessment Systems International a.s.

[Remote](#)

SHINY R DEVELOPER

2018 - 2019

- I worked under contract to develop an R application with a Shiny front-end for machine-learning-driven assessment of candidates based on psychometric data, and I,
  - created a proof-of-concept that was accepted for further development
  - wrote the client-side components
  - designed and implemented a web UI in Shiny that enabled interactive navigation through the ML-model-building process and enabled the user to save and reuse the resulting model
  - coordinated project management remotely with the client using agile methodology
- The application drew on R packages to provide feature selection methods, classification and regression algorithms, and ensemble models, specifically elastic net models (glmnet), tree-based models (rpart), support vector machines (svmRadial), random forest (rf), neural networks (nnet), and k-nearest neighbour (knn)
- The application enabled the client to engage consultants with no programming experience and increased the effectiveness of the assessment process

### Leeds Beckett University

[Leeds, England](#)

PHD SCHOLAR

2017 - ongoing

- My research looked into improving the routine feedback letters with height and weight results delivered to all parents with Reception and Year 6 children as part of the National Child Measurement Programme (the NCMP) in England
- The project engaged multiple stakeholders such as Local Government, Public Health England, and parents, and provided nuanced insights into the NCMP, throughout the project I,
  - developed three complex studies using qualitative and quantitative methods
  - gathered opinions of 92 Local Government Authorities in England about how they use the NCMP and provided the results to the Public Health England as evidence for further improvement
  - prepared cluster randomised controlled trial and stratification procedure with reliance on clustering utilising k-means
  - developed a new version of the feedback letters which resulted in improvement of parental perceptions about the letters
  - used computerised text analysis techniques on a vast corpus of text data. For example, sentiment analysis, topic modelling (LDA), hierarchical clustering
  - used Google Natural Language Processing speech-to-text API to automatically transcribe all the interviews
- I became experienced with content analysis, literature and evidence reviews, and contributed to the writing of reports and journal articles
- I presented my findings at,
  - UKCO, Newcastle upon Tyne, England United Kingdom, September 2019
  - Public Health England Annual Conference 2018, University of Warwick, UK
  - Weight Stigma Conference, Leeds, UK, June 2018
  - UKCO, Newcastle upon Tyne, England United Kingdom, June 2018

## Influencer.cz

Prague, Czechia

### MARKETING ANALYST

2013 - 2017

- As a marketing researcher executive, I was primarily responsible for the management of social media pages, content creation, and copywriting
- My clients were OZP (the third largest insurance provider in Czechia), BMW Mini (car manufacturer), and Centropol (energy and gas supplier), for these clients I,
  - prepared engaging content for their pages which led to an increase in sales and engagement of the page visitors
  - developed a transparent marketing strategy and content plans that are still used by the clients
  - provided long-term content plans that engaged their customers and facilitated sales
- Some other clients I have worked with were Lexus (car manufacturer), NKC (a non-profit organisation for the representation of woman in STEM), for them I,
  - provided an analysis of their marketing strategy and content
  - conducted customer segmentation using R and latentclass modelling
  - developed descriptive reports using ggplot2 and RMarkdown proposing a suitable marketing strategy

## University of Cambridge

Cambridge, England

### VISITING RESEARCHER

2015 - 2016

- I joined the Policy Research Group at the University of Cambridge as a visiting researcher under the supervision of Dr Kai Ruggeri. As a member of the group I,
  - developed infographics, reports, and presentations for the Safer Care Pathways in Mental Health Services project supported by The Health Foundation (<https://cli.re/rwmbWR>)
  - assisted with data collection and development of a database containing Issue-Based Industry Collectives in the alcohol industry and their characteristics for Dr Jochem Kroezen (<https://cli.re/Zejkxx>)
  - helped to design the Health@Work (H@W) questionnaire for an organisational setting that aimed to match employees' views on health and wellbeing to those of employers'
  - assisted with data collection of Pro Bono activities of U.S. Law firms for Dr Lionel Paoella
  - attended policy lectures and MBA courses in microeconomics

## Junior Research Programme

Europe

### JUNIOR DATA ANALYST

2014 - 2015

- I have joined a team of early-career researchers in the position of Junior Data Analyst and collaboratively developed a project focusing on Obesity discrimination in the Workplace supervised by Dr Stuart Flint
- The project was disseminated as a journal article (<https://cli.re/JpW7k5>)
- Our work was featured in the following media:
  - <https://cli.re/Qm54PB>
  - <https://cli.re/mqrM2P>
  - <https://cli.re/b1x17e>

## Courses

### Online

<https://www.datacamp.com>

#### DATA CAMP

2018 - ongoing

- Introduction to SQL, Python for R Users, Foundations of Inference, Inference for Linear Regression in R, Inference for Numerical Data in R, Inference for Categorical Data in R, Case Study: Exploratory Data Analysis in R, Cleaning Data in R, Structural Equation Modeling with lavaan in R, Factor Analysis in R, Machine Learning with caret in R, Introduction to Machine Learning, Multiple and Logistic Regression in R, Introduction to Importing Data in R, Correlation and Regression in R, Introduction to Data in R, Reporting with R Markdown, Exploratory Data Analysis in R, Data Visualization with ggplot2 (Part 1), Data Visualization in R, Joining Data in R with dplyr, Data Manipulation in R with dplyr, Importing & Cleaning Data in R: Case Studies, Intermediate Importing Data in R, Intermediate R: Practice, Intermediate R, Introduction to R

### Course

Leeds, England

#### UNIVERSITY OF LEEDS

2018

- Summer School of Causal inference with observational data: the challenges and pitfalls (5 days course). This five-day summer school offered state-of-the-art training in the analysis of observational data for causal inference. By exploring the philosophy and utility of directed acyclic graphs (DAGs) participants learn to recognise and avoid a range of common pitfalls in the analysis of complex causal relationships, including the longitudinal analyses of change, mediation, nonlinearity and statistical interaction

### Online

<https://cli.re/5Azz8D>

#### AGROCAMPUS OUEST

2017

- Exploratory Multivariate Data Analysis (MOOC) by François Husson, Professor of statistics. The course focused on four essential and basic methods: principal component analysis (PCA) to handle quantitative variables, correspondence analysis (CA) and multiple correspondence analysis (MCA) to handle categorical variables and clustering, and an extension to Multiple Factor Analysis (MFA) to analyse a more complex dataset that is structured by groups

### Course

Leeds, England

#### LEEDS BECKETT UNIVERSITY

2017

- Understanding statistics and data analysis in R. This five-day course led by Professor Clive Beggs aimed to equip students and staff with the understanding necessary to undertake post-graduate research. The course covered topics such as variance & probability, parametric hypothesis testing, non-parametric testing, generalized linear models, bootstrapping & Monte Carlo techniques, and introduction to machine learning.

## Course

Cambridge, England

UNIVERSITY OF CAMBRIDGE

2016

- Certified IRT and CAT course using Concerto at Psychometric Centre (3 days course). This course focused on producing online state-of-the-art psychometric tests, as well as an introduction to the Item Response Theory (IRT), Computer Adaptive Testing (CAT), and the open-source online adaptive test development platform, Concerto

## Community

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### Leeds R Meetups

Leeds, England

CO-ORGANISER

2019 - Present

- As an R enthusiast, I have been involved in organising the R meetups in Leeds
- <https://cli.re/E59kPe>

### Leeds Beckett R Meetups

Leeds, England

ORGANISER

2018

- I held a series of R meetups to provide R training to other PhD students, and supported the statistical analysis that was essential for other research projects.

### Qualtrics workshops

Leeds

LECTURER

2018

- Delivering series of free workshops about survey development for research staff at Leeds Beckett University

## Education

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### Leeds Beckett University

Leeds, England

PHD DEGREE, PUBLIC HEALTH

2017 - ongoing

### Charles University

Prague, Czechia

MASTER'S DEGREE, PSYCHOLOGY

2013 - 2016

### Charles University

Prague, Czechia

BACHELOR'S DEGREE, PSYCHOLOGY

2010 - 2013