LISPOP Workshops on

Reproducible Research using R

The Laurier Institute for the Study of Public Opinion and Policy is hosting a series of workshops on reproducible research in the social sciences during the Winter Reading Week from February 22nd to the 25th. A mix of remote courses will be offered introducing undergraduate and graduate students, faculty and researchers to introductory and advanced statistical analysis and data visualization using R, RMarkdown and GitHub. Register here https://lispop.ca/winter_workshops/ for one of the following courses:

1. Introduction to R (February 22nd-23rd)
2. Data Visualization with R (February 24th)
3. R and Github for Reproducible Research (February 25th)
4. Advanced Modelling with R (February 24th)
5. R and RMarkdown for Reproducible Research (February 25th)

Introduction to R (February 22nd – 23rd)

Course Description

Introduction to R will cover everything needed to begin working with data in RStudio, with a focus on tidyverse style. The workshop will begin with a module to cover installation, basic syntax, and file types. Data types and structures in R will be explained and participants will learn how to manipulate data tables to summarise and present key information. To facilitate working with real data, the workshop will cover data import for a variety of file types, cleaning, and joining. Data visualization will be taught using ggplot, focusing on histograms, scatter plots, and bar charts. Finally, the workshop will teach how to use R to look for relationships between variables using chi-squared tests, t-tests, and linear regressions.

Prerequisites

Participants should install R and RStudio before the workshop, but no previous knowledge of R or programming is required.

Course Fees: $300+HST

[Register on Eventbrite](#)

Instructor Biography

Amy Farrow is currently a master's student at the Faculty of Information at the University of Toronto, studying Human-Centred Data Science. Her previous degrees are in sociology and math. Currently, she works as a research assistant for the University of Toronto's Data Sciences Institute and Ryerson University and volunteer with the Toronto Data Workshop and my faculty's Accessibility Interests Working Group. Previously, she has worked as a data and policy analyst and a tutor.

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Data Visualization with R (February 24th)

Course Description

This workshop will showcase the data visualization capabilities of R with an emphasis on the expansive and highly customizable graphics that can be produced with the ggplot2 package. The session will cover commonly produced graphs to communicate scientific results (bar plots, histograms, scatter plots, cumulative incidence curves) and touch on additional packages for spatial visualisation and interactive plots. Workshop participants will have the opportunity to wrangle and prepare a data set for visualization, and thoughtful presentation and communication of data will be discussed.

Prerequisites

Attendees should have R and RStudio installed on their local machines and know-how of reading data into the working environment.

Register on Eventbrite

Instructor Biography

Julia Ma is a Data Scientist at Precision-Analytics, a Montreal-based consultancy. She has extensive experience supporting clinical and academic research, working with data that range from electronic medical records to provincial-level administrative data. Julia's work spans observational and experimental studies including quality improvement initiatives, health economic analyses, and predictive modelling. She holds a Master's degree in Epidemiology from the Dalla Lana School of Public Health, University of Toronto.

Course Fees: $250+HST

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Abstract

This course will introduce participants to the use of GitHub as a tool for encouraging collaboration, archiving, knowledge mobilization and reproducibility. Topics for the course will include:

- Repository creation
- linking repositories with RStudio projects
- tracking, committing and pushing changes
- branch creation and merging, particularly to facilitate collaboration
- conflict resolution after merge

Register on Eventbrite

Instructor Biography

Rachael Lam (Details forthcoming)

Course Fees: $250+HST

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Advanced Modelling with R (February 24th)

Abstract

This workshop will examine statistical models in greater depth. Topics will include the OLS model in R, visualizing effects conducting diagnostics as well as logistic and multinomial logistic regression.

Register on Eventbrite

Instructor Biography

At Crestview Strategy, Marcus provides critical insight on research methodologies, data collection and analysis, and statistical modelling techniques. He is a published academic researcher with advanced expertise in variance estimation strategies including linear and logistic regression, multi-level modelling, and time series analysis.

Previously, Marcus worked as a Researcher at Simon Fraser University where contributed to research projects related to political behaviour, public opinion, and public policy. Marcus is highly skilled at data wrangling and visualization using R open-source computing software and has exceptional abilities in communicating results to diverse audiences.

Marcus is a doctoral candidate (ABD) in Political Science at Simon Fraser University and holds a master's degree in Political Science as well as a Bachelor of Arts (Hons.) in International Studies. His doctoral research investigates the extent to which contextual circumstances influence personal political expressions in Canada and across Western democracies.

Course Fees: $250+HST

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Course Description

This workshop will introduce the process of organizing analysis scripts within an R Project and the use of R Markdown to produce reproducible dynamic reports. Document types that will be explored during this session include HTML, PDF, and Microsoft Word. Methods of customizing outputs using report templates and CSS stylesheets will be discussed. Use of the 'renv' and 'here' packages will be emphasized.

Prerequisites:

Attendees should have R and RStudio installed on their local machines and know-how of reading data into the working environment. To produce Word documents from R Markdown scripts, Microsoft Word must be installed, and LaTeX must be installed to render PDF documents (including Beamer slides).

Register at Eventbrite

Instructor Biography

Julia Ma is a Data Scientist at Precision-Analytics, a Montreal-based consultancy. She has extensive experience supporting clinical and academic research, working with data that range from electronic medical records to provincial-level administrative data. Julia's work spans observational and experimental studies including quality improvement initiatives, health economic analyses, and predictive modelling. She holds a Master's degree in Epidemiology from the Dalla Lana School of Public Health, University of Toronto.

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