RISIS
RESEARCH INFRASTRUCTURE FOR SCIENCE AND INNOVATION POLICY STUDIES

This project is funded by the European Union under Horizon2020 Research and Innovation Programme Grant Agreement n°824091

RISIS TRAINING – CALL FOR SUBMISSION

Consiglio Nazionale delle Ricerche
IRCrES
ISTITUTO di RICERCA sulla CRESCITA ECONOMICA SOSTENIBILE
RESEARCH INSTITUTE on SUSTAINABLE ECONOMIC GROWTH

Machine Learning using Stata with applications to RISIS datasets

ON LINE COURSE
23 November 2022

COURSE PRESENTATION

Predictive analytics has become highly relevant not only in hard sciences and engineering, but also in the social sciences. Based on computational statistics, Machine Learning has proved to be an extraordinary tool for prediction purposes and complexity reduction in many social science contexts. People belonging to the RISIS community, as well as other interested people, can thus take advantage of learning about Machine Learning techniques and how to apply them using the popular Stata software. The course is a primer to ML in Stata with application to some RISIS datasets.

OBJECTIVES:

In this one-day course, after an introductory lecture on Machine Learning for the social sciences, I present two related Stata modules, r_ml_stata_cv and c_ml_stata_cv, for fitting popular Machine Learning (ML) methods both in a regression and a classification setting.

Using the recent Stata/Python integration platform (SFI) introduced in Stata 16, these commands provide hyper-parameters' optimal tuning via K-fold cross-validation using grid search. More specifically, they make use of the Python Scikit-learn API to carry out both cross-validation and outcome/label prediction.

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Applications will be carried out on RISIS datasets.

EXPECTED OUTCOMES:

Participants are expected to become familiar with Machine Learning applications in Stata, after receiving a short introduction to the subject. Also, they will learn about the potential of predictive analytics for both exploratory and policy analysis within the context of the STI datasets provided by the RISIS infrastructures.

TARGET AUDIENCE:

This course targets researchers aiming to master tools and methodologies to dig into Machine Learn applications.

It will involve up to 15 participants. It is addressed to:

-Senior scientists, early career researchers and PhD students

-Policy makers at the local, regional, national and international level (e.g., European Commission)

-Research associations

PROGRAM OF COURSE

23/11/22

10h -12h: Section 1:(Lecture Session): Introduction to Machine Learning for social scientists

14h -16h: Section 2 (Applied Session): Applying Machine Learning using Stata on RISIS datasets

CONDITIONS FOR PARTICIPATION

SELECTION CRITERIA:

Participants should have some basic notions of basic statistics (mainly regression models), a working knowledge of Stata, and some practice with STI analysis.

It is not necessary for participants to have knowledge of Python.

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ORGANISATIONAL DETAILS:

This course will be an online course.

HOW TO APPLY:

Send your application to giovanni.cerulli@ircres.cnr.it describing your motivations and adding a short bio.

ORGANISING COMMITTEE AND CONTACT DETAILS

This course is organised by IRCrES, Research Institute on Sustainable Economic Growth of the National Research Council of Italy.

Local organizing commitee:

Giovanni Cerulli (CNR-IRCrES)

Antonio Zinilli (CNR-IRCrES)

Contact: giovanni.cerulli@ircres.cnr.it