EAA Web Session
Open-Source Tools R and Python: Extending the Actuary's Toolbox

29/30 September 2025 | 09:00-17:00 CEST | online

Introduction

Over the last years, typical data science tasks like data manipulation and modelling have gained a stronger foothold in the day-to-day professional life of the actuary. Open-source languages are renowned to be especially equipped to deal with these kinds of tasks, but can also be tricky to get started with, especially when one has not been properly introduced to them. This workshop offers the opportunity to become more familiar with the open-source environment and its applications, illustrated in detail by means of a number of hands-on modules, thereby enabling the actuary to tackle the data science tasks in an elegant manner.

Open-source tools like R, Python and more recently Julia have gained a lot of momentum in recent years, not just in popularity but also in the amount of contributed code. Their respective communities are nowadays no longer exclusively composed of academic researchers and scientists, but also of professionals of all sorts of backgrounds, especially since the industry and corporate world have understood the added value of 'community driven software' and started to plug open-source tools into their processes and corporate tissue.

On top of this, actuaries are confronted with the same issues as academic researchers and scientists: the production of readable, shareable and reproducible code and results. In the actuarial community, R already is a fairly known and used open-source language, Python however a little bit less, even if it's also packed with potential and even if it disposes of a vast biosphere of its own. This workshop will also focus on the 'scientific stack' of both R and Python and draw some comparisons between both worlds where we will try to show that it's not a matter of choosing between both ecosystems but of choosing the best of both (continuously evolving) worlds.

Participants

This training is suited for all actuaries who like to broaden their existing IT toolset. Basic knowledge regarding data analysis and/or development of actuarial tools is useful, yet not required.

Attendees are encouraged to bring a laptop computer with R and Python installed (*). One can install R from https://www.r-project.org/. As the editor we'll be using 'RStudio', which can be installed from https://www.rstudio.com/ - One can install Python in numerous ways, but the

easiest way is to install the 'all-in' distribution Anaconda (https://www.anaconda.com/, choose the default "Python 3.x" version). With anaconda installed, one has also the possibility to add R and 'RStudio' to the anaconda environment as one can notice in the 'Anaconda Navigator'.

(*) prior to the training, we will supply the participants with an exhaustive list of packages/libraries that need to be installed additionally to the above tools, as well as a description of how to install them.

Purpose and Nature

The goal of this two-day training is to introduce the participants to both open-source ecosystems and to give them a good understanding of both languages. However, since both ecosystems are way too vast to be covered in merely two days, the participants will be asked to go through the basics of both languages themselves, prior to the web session. During the first three hours of the web session, these basics which will be shortly revised, but at a higher pace. The course material, containing the basics of both languages, will be provided by the organizers several weeks before the beginning of the web session, such that the participants will have plenty of time to go through the material at her/his ease.

As such, less time needs to be spent on the basic elements of both languages, thereby enabling us to organize a three-hour hands-on exercise session to more easily assimilate the course material. Note that the participants need to bring along a laptop on which both R and Python are installed. Instructions on how to do so will be provided by the organizers at the same time as the course material of R and Python basics, hence several weeks in advance.

As a result, a jump-start on how to truly use these languages in practice will be provided to the participants, by focusing on solutions for problems that they will surely regularly encounter in their day-to-day job, by handing over lots of links to online resources and very rich course material and by even organizing hands-on exercise sessions.

Language

The language of the web session will be English.

Lecturers

Luc Kesters

Luc Kesters is a consulting life actuary and the last 20 years he's working with Vereycken & Vereycken, a Belgian based insurance software development and consultancy company, on actuarial and IT related jobs with a strong focus on reporting and portfolio migrations. During his career IT solutions and technology have always taken up an important part of his work. In that context, he uses Python amongst others on a daily basis.

Robin Van Oirbeek

Robin Van Oirbeek, after having worked as a statistician/data scientist for different companies, is now working as a Data Scientist/Quantitative Developer at Ageas Re. He is also invited lecturer at UCLouvain. He uses R, amongst others, on a daily basis and this for over 15 years now.

Preliminary Programme

Monday, 29 September 2025

09:00-10:30	R Basics
10:30-11:00	Break
11:00-12:30	Importing and manipulating your data in R
12:30-13:30	Break
13:30-15:00	Showing (off) your work: how to visualize and report in R
15:00-15:30	Break
15:30-17:00	Actuarial applications and exercise session in R

Tuesday, 30 September 2025

09:00-10:30	Python Basics
10:30-11:00	Break
11:00-12:30	Importing and manipulating your data in Python
12:30-13:30	Break
13:30-15:00	Showing (off) your work: how to visualize and report in Python
15:00-15:30	Break
15:30-17:00	Actuarial applications and exercise session in Python

All the above times are given in CEST (Central European Summer Time).

Fees & Registration

Early Bird Registration Fee (until 18 August 2025):

- For private customers in the EU: €900.00 + VAT of the billing country (example Germany: €1,071.00 incl. 19% VAT)
- For private customers outside the EU: €1,071.00 (incl. 19% VAT)
- For businesses within the EU (excl. Germany, with valid VAT ID): €900.00 (net, reverse charge applies)
- For businesses in Germany: €1,071.00 (incl. 19% VAT)

Regular Registration Fee (from 19 August 2025):

- For private customers in the EU: €1,150.00 + VAT of the billing country (example Germany: €1,368.50 incl. 19% VAT)
- For private customers outside the EU: €1,368.50 (incl. 19% VAT)
- For businesses within the EU (excl. Germany, with valid VAT ID): €1,150.00 (net, reverse charge applies)
- For businesses in Germany: €1,368.50 (incl. 19% VAT)

Important VAT Information:

- For private customers with a billing address in an EU country: VAT will be charged at the applicable rate in the country of the billing address. The final amount, including VAT, will be calculated upon invoicing.
- For customers with a non-EU (third country) billing address: Only a non-company billing address is accepted for VAT compliance reasons. 19% VAT applies to all non-EU private customers.
- For businesses within the EU (excluding Germany), Iceland, Liechtenstein, Norway, Switzerland, and the UK with a valid VAT ID: The reverse charge mechanism applies (net price; VAT will not be charged). Please ensure your valid VAT ID is entered correctly during registration.
- For all customers with a billing address in Germany: 19% VAT applies.

Please submit your registration using this online form. Closer to the event, you will receive further login details to join the web session.

Your registration is binding. Cancellation is only possible up to 2 weeks before the first day of the event. If you cancel later, the full participation fee is due. You may appoint someone to take your place but must notify us in advance. EAA has the right to cancel the event if the minimum number of participants is not reached.

We will send you an invoice via email. Please allow a few days for handling. Please always give your invoice number when you effect payment. All bank charges are to be borne by the participant.

Registration is open until two working days before the web session. If registration has already been closed for this web session, please call us or send an email to contact@actuarial-academy.com in order to find out whether a late registration is still possible.

Technical Requirements

Please check with your IT department if your firewall and computer settings support web session participation (the programme Zoom will be used for this online training). Please also make sure to join the web session with a stable internet connection.

CPD

For this web session, the following CPD credits are available under the CPD scheme of the relevant national actuarial association:

Austria:	12 points
Belgium:	12 points
Bulgaria:	15 points
Croatia:	individual accreditation
Czechia:	12 hours
Denmark	12 credits

Estonia:	12 hours
Finland:	8 points
France:	72 points
Germany:	12 hours
Greece:	16 points
Hungary:	12 hours
Iceland:	12 credits
Ireland:	12 hours
Italy:	approx. 4 credits (individual accreditation)
Latvia:	12 hours
Lithuania:	12 hours
Netherlands:	approx. 12 points (individual accreditation)
Norway:	12 points
Poland:	12 hours
Portugal:	12 hours
Serbia:	5 hours
Slovakia:	8 points
Slovenia:	50 points
Spain:	CAC: 12 hours, IAE: 12 hours
Switzerland:	15 points
USA:	SOA (Section B): up to 14.4 hours