

## EAA Web Session

# Machine Learning Finance for Pension Funds with Examples

30 October 2025 | 14:00-16:15 CET | online

### Introduction

In general, Machine Learning (ML) is the study of algorithms that improve through experience. These algorithms or models can make systematic, repeatable, validated decisions based on historical data. ML has come a long way in recent years, which is reflected in the methods available for time series forecasting (they are also important for assessing parameters for different kinds of liability provisions).

Therefore, this type of analysis can help actuaries and members of pension fund boards of trustees to accurately assess different kinds of pension fund parameters for assets and liabilities and to prepare any kind of forecasts. Visualizing the evolution of pension fund parameters and forecasting them will help the board of trustees explain how to adjust them in the actuarial provision or what to expect in their future evolution.

For this workshop, several examples for analyzing and providing such assumptions will be prepared and explained. Many useful visualization techniques will be presented with practical examples (via Python).

### Participants

The web session is suited for pension fund actuaries and actuarial professionals, IT-developers of pension fund software tools that are directly or indirectly involved in actuarial and investment consulting for pension funds and collective foundations with occupational provisions. Additionally, these topics could be useful for members of pension fund board of trustees, pension fund managers, and pension fund auditors.

### Purpose and Nature

The annual financial statement of a pension fund shows all very important parameters of the liabilities as well as all types of reserves. Machine Learning Finance helps to verify all levels of reserves and to prepare the annual financial statement presentation for the members of the Board of Trustees - this helps them to make their final decisions.

## Language

The language of the web session will be English.

## Lecturers

### Dr Ljudmila Bertschi

Ljudmila is a qualified member of the Swiss actuarial association (SAV/SAA) and an accredited pension actuary of the Swiss chamber of pension fund experts (SKPE). She has a PhD in phys.-math. from the MSU and has worked in pension fund consulting for about 20 years in different Swiss and international consulting firms and insurance companies. She conducted a research study for the Federal Office of Social Security (2015), prepared many publications and presentations for international conferences as well as made training presentations for Swiss chamber of pension fund experts (liability forecasting with Markov chains incl.).

### Dr Mauro Triulzi

Mauro is a qualified member of the Swiss actuarial association (SAV) and has a Dr. math. ETHZ. He has worked for about 20 years as a developer of actuarial tools and implemented the nested stochastic modelling for pension fund liabilities including mortality rates for ALM studies. Currently he develops different actuarial tools for local and international accounting valuations as well as pension fund administration services. He prepared presentations for international conferences together with Ljudmila.

## Preliminary Programme

### 30 October 2025

14:00-15:00	Topics
	<ul style="list-style-type: none"><li>• Principles of Machine Learning in the financial sector</li><li>• Visualization of the historical development of returns on pension fund assets based on Pictet indices in order to be able to set parameters for target values of the investment fluctuation reserve (TV IFR)</li><li>• Explanation of how such a visualization can be prepared (with Python)</li></ul>
15:00-15:15	Break
15:15-16:15	Topics
	<ul style="list-style-type: none"><li>• Examples of asset return forecasts (prepared with Monte Carlo)</li><li>• Explanations of how to verify forecasts based on different approaches (e.g. based on normal distribution vs historical data)</li><li>• Summary</li></ul>

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

## Fees & Registration

### Early Bird Registration Fee (until 18 September 2025):

- For private customers in the EU: €150.00 + VAT of the billing country (example Germany: €178.50 incl. 19% VAT)
- For private customers outside the EU: €178.50 (incl. 19% VAT)
- For businesses within the EU (excl. Germany, with valid VAT ID): €150.00 (net, reverse charge applies)
- For businesses in Germany: €178.50 (incl. 19% VAT)

### Regular Registration Fee (from 19 September 2025):

- For private customers in the EU: €195.00 + VAT of the billing country (example Germany: €232.05 incl. 19% VAT)
- For private customers outside the EU: €232.05 (incl. 19% VAT)
- For businesses within the EU (excl. Germany, with valid VAT ID): €195.00 (net, reverse charge applies)
- For businesses in Germany: €232.05 (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](mailto: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:	2 points
Belgium:	2 points
Bulgaria:	3 points
Croatia:	individual accreditation
Czechia:	2 hours
Denmark:	2 credits
Estonia:	2 hours
Finland:	2 points
France:	12 points
Germany:	2 hours
Greece:	3 points
Hungary:	2 hours
Iceland:	2 credits
Ireland:	2 hours
Italy:	individual accreditation
Latvia:	2 hours
Lithuania:	2 hours
Netherlands:	approx. 2 points (individual accreditation)
Norway:	2 points
Poland:	2 hours
Portugal:	2 hours
Serbia:	2 hours
Slovakia:	individual accreditation
Slovenia:	individual accreditation
Spain:	CAC: 2 hours, IAE: 2 hours
Switzerland:	individual accreditation
USA:	SOA (Section B): up to 2.4 hours

No responsibility is taken for the accuracy of this information.