EAA Web Session
Actuarial Data Science - Completion

3-5 September 2025 | online

Organised by the EAA - European Actuarial Academy GmbH in cooperation with the Aktuarvereinigung Österreichs (AVÖ).

This is part four of four courses required to obtain the *EAA Certificate in Actuarial Data Science*. To earn the certificate, participants must complete all four modules, which include both the seminar and the exam. Members of AVÖ and/or DAV will obtain the additional title Certified Actuarial Data Scientist (by AVÖ and/or DAV) by fulfilling the same requirements.

Furthermore, all courses are open to interested actuaries to deepen their knowledge and skills in the field of Actuarial Data Science (without exams).

Introduction

Due to technological progress in connection with Data Science and Digitalization, summarized under the buzzword Big Data, a plethora of opportunities and challenges for the industry is arising.

Technological developments have now also reached the insurance industry and thus have a direct impact on the working world of actuaries.

Under the heading *Actuarial Data Science*, the procedures and methods of data mining are embedded in the actuarial context. These range from mathematics-driven statistical methods for derivation of insights from data to computation-driven methods sometimes summarized as machine learning. As a result of almost unlimited computing capacity through cloud computing and wide availability of training data, tried and tested methods of machine learning, such as artificial neural networks, are experiencing a renaissance in theory and practice.

This web session is the fourth part of a four-part series at the German Actuarial Association (DAV). In this online training, we will expand on and deepen some of the topics already known from the basic, advanced and immersion seminar, discussing further important techniques in the context of deep learning and data storage. It is based on the learning objectives of the DAV for Actuarial Data Science Immersion, which is part of the actuarial training in Germany.
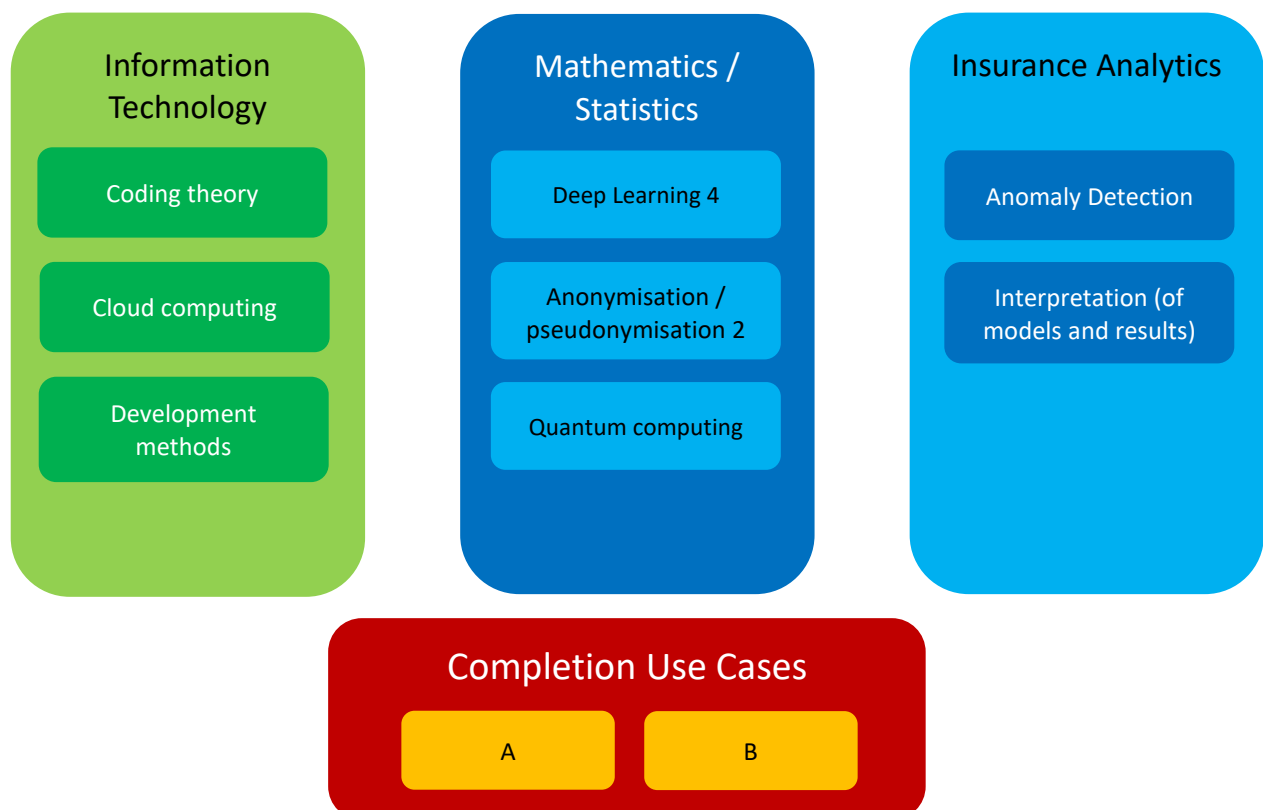
Participants

This web session is suited for actuaries (and actuaries in training), interested persons and for everyone who wants to get to know the topic (more precisely). Previous knowledge in Actuarial Data Science is helpful, but **not** mandatory. A solid mathematical education is necessary to follow some of the concepts that will be presented.

Purpose and Nature
of part 4: Actuarial Data Science - Completion

Based on the building blocks known from the preceding courses, we want to deepen some topics and present further important topics from the field of Actuarial Data Science.

In this three-day training, we deepen techniques and methods of (Actuarial) Data Science and take a rather theoretical tour to complete this course. We will cover important aspects of information theory from coding theory to web computing and close the mathematical foundations of deep learning. Along with insights in relevant aspects of insurance analytics we will investigate use cases in an insurance context. Finally, we will give a prospect of what is probably going to emerge in the future, namely quantum computing.

Information Technology	Mathematics / Statistics	Insurance Analytics
Coding theory	Deep Learning 4	Anomaly Detection
Cloud computing	Anonymisation / pseudonymisation 2	Interpretation (of models and results)
Development methods	Quantum computing	

Completion Use Cases

A	B

Language

The language of the seminar will be English. The exams will be, by your preference, in German or English. Please choose the language during the booking process.

Lecturers

<u>Wolfgang Abele</u> joined Deloitte 2018 as Senior Manager in the actuarial Non-Life team. He has more than 18 years of experience in the consulting and insurance industry, having worked for HDI Versicherung AG, MSG Consulting und Allianz. Before he joined Deloitte Wolfgang was head of the unit Reserving & Reinsurance.Throughout his career, he was involved in a large number of actuarial projects, in pricing, reserving (IFRS, local GAAP, Solvency II), internal modelling and risk management. His focus was on predictive modelling, analytics, and process optimization. He has extensive knowledge in the programming language R and gives seminars on actuarial data science for the Deutsche Aktuar-Akademie (DAA).

<u>Dr Lukas Best</u> is a certified actuary (DAV) and works as the lead data scientist at SV SparkassenVersicherung in Stuttgart, Germany. The focus of his work lies on both the development and productive deployment of statistical and machine learning models in SV's big data ecosystems. Before joining SV in 2019, Lukas worked at the Institute of Finance and Actuarial Science (ifa) in Ulm as a senior consultant on data analytics. He is a lecturer for the German certification programme on actuarial data science for the DAA.

<u>Dr Axel Kaiser</u> is a mathematician and actuary (DAV) at SIGNAL IDUNA Krankenversicherung a. G. He is the appointed actuary for health insurance and member of the DAV committee for actuarial data science.

<u>Dr René Külheim</u> is a mathematician and actuary (DAV) at PTA GmbH, where he heads the artificial intelligence department. In addition to data science-based project work in the financial sector, he is responsible for cloud-based software products with AI components.

<u>Dr Zoran Nikolić</u> is a certified actuarial data scientist (DAV) working at *B&W Deloitte in Cologne*. For years he has lectured on actuarial, risk management and machine learning topics for DAV and the University of Cologne. In addition, he is a lecturer with the German Actuarial Academy (DAA) for *Actuarial Data Science* and member of the Committee *Actuarial Data Science*of DAV.

<u>Prof Dr Jonas Offtermatt</u> is a professor of programming and mathematics at DHBW Stuttgart. He has been working as a programming actuary since 2015 and has been teaching at DAA since 2019. With previous leadership roles in the insurance industry, he possesses extensive experience of IT-management and software development.

<u>Dr Antonia Schöning</u> is a mathematician and actuary (DAV). She is working as a senior data scientist at Siemens Smart Infrastructure, developing AI applications and maintaining machine learning in operations for the energy sector.

<u>Dr Jan-Philipp Simen</u> studied business and economics (Wirtschaftswissenschaften) first at TU Dortmund and then at the University of Hohenheim. There he received his doctorate in 2015

with a dissertation on "Estimating operational cost functions with artificial neural networks". Dr Simen was a data scientist at Volkswagen AG from 2015 to 2017. Since 2017 he has been working at Carl Zeiss AG in Munich. As a senior ML engineer, he is responsible for a cloud application for deep learning and computer vision used throughout the ZEISS group.

Prof Dr Fabian Transchel holds the endowed chair of e+s Rück for Data Science at Harz University of Applied Sciences, Wernigerode, Germany. He's an avid proponent of Machine Learning and Artificial Intelligence in the insurance sector and has been instrumental in innovating motor insurance through telematics technologies, these days also teaching Actuarial Data Science for DAA and EAA.

Prof Dr Christian Weiss teaches mathematics, statistics and artificial intelligence at Ruhr West University of Applied Sciences. After completing his PhD studies in Bonn and Frankfurt, he worked as an actuary in risk management before returning to academia and finishing his habilitation. He has published more than 35 papers and four books in various areas of mathematics including data science, probability theory and financial and actuarial mathematics. Moreover, he works as a part time consultant in the insurance industry at Deloitte.

Preliminary Programme

Wednesday, 3 September 2025

09.00 – 09.15	Introduction & welcome
09.15 – 10.00	Information Technology– Coding theory
10.00 – 10.45	Information Technology– Coding theory
10.45 – 11.00	Break
11.00 – 11.45	Information Technology – Cloud computing
11.45 – 12.30	Information Technology – Cloud computing
12.30 – 13.30	Break
13.30 – 14.15	Information Technology – Cloud computing
14.15 – 15.00	Information Technology – Development methods
15.00 – 15.15	Break
15.15 – 16.15	Use Case
16.15 – 17.00	Use Case

Thursday, 4 September 2025

09.00 – 09.45	Insurance Analytics – Anomaly Detection
09.45 – 10.45	Insurance Analytics – Anomaly Detection
10.45 – 11:00	Break
11.00 – 11.45	Insurance Analytics – Interpretation (of models and results)
11.45 – 12.30	Insurance Analytics – Interpretation (of models and results)
12.30 – 13.30	Break
13.30 – 14.15	Insurance Analytics – Interpretation (of models and results)
14.15 – 15.00	Insurance Analytics – Interpretation (of models and results)
15.00 – 15.15	Break
15.15 – 16.15	Mathematics & Statistics – Deep Learning 4
16.15 – 17.00	Mathematics & Statistics – Deep Learning 4

<u>Friday, 5 September 2025</u>

09.00 – 09.45	Mathematics & Statistics – Deep Learning 4
09.45 – 10.45	Mathematics & Statistics – Deep Learning 4
10.45 – 11:00	Break
11.00 – 11.45	Mathematics & Statistics – Anonymisation / pseudonymisation 2
11.45 – 12.30	Mathematics & Statistics – Quantum computing
12.30 – 13.30	Break
13.30 – 14.15	Mathematics & Statistics – Quantum computing
14.15 – 15.00	Preparation for the exam
15.00 – 15.15	Break
15.15 – 16.15	Use Case
16.15 – 16.30	Use Case
16.45 – 17.00	Concluding remarks, closing of seminar

<u>All the above times are given in CEST (Central European Summer Time).</u>

Fees & Registration

<u>Early Bird Registration Fee (until 23 July 2025):</u>
- For private customers in the EU: €1,170.00 + VAT of the billing country (example Germany: €1,392.30 incl. 19% VAT)
- For private customers outside the EU: €1,392.30 (incl. 19% VAT)
- For businesses within the EU (excl. Germany, with valid VAT ID): €1,170.00 (net, reverse charge applies)
- For businesses in Germany: €1,392.30 (incl. 19% VAT)

<u>Regular Registration Fee (from 24 July 2025):</u>
- For private customers in the EU: €1,521.00 + VAT of the billing country (example Germany: €1,809.99 incl. 19% VAT)
- For private customers outside the EU: €1,809.99 (incl. 19% VAT)
- For businesses within the EU (excl. Germany, with valid VAT ID): €1,521.00 (net, reverse charge applies)
- For businesses in Germany: €1,809.99 (incl. 19% VAT)

<u>Important VAT Information:</u>
- 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.

actuarial-academy.com

Please send your registration by using our this online form. After your registration, you will receive further log-in details to join the web session.

Your registration is binding. Cancellation is only possible up to 4 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:	19.5 points
Belgium:	19 points
Bulgaria:	15 points
Croatia:	individual accreditation
Czech Republic:	19.5 hours
Denmark:	21 hours
Estonia:	19.5 hours
Finland:	11.75 points
France:	117 points
Germany:	21 hours
Greece:	26 points
Hungary:	20 hours
Iceland:	19.5 credits
Ireland:	19.5 hours
Italy:	approx. 4 credits (GdLA individual accreditation)
Latvia:	20 hours
Lithuania:	19.5 hours

Netherlands:	approx. 19.5 PE-points (individual accreditation)
Norway:	20 points
Poland:	19.5 hours
Portugal:	19.5 hours
Serbia:	5 hours
Slovakia:	8 CPD points
Slovenia:	50 points
Spain (CAC):	20 hours
Spain (IAE):	19 hours
Switzerland:	15 points
USA:	SOA: (Section B): up to 23.40 hours

No responsibility is taken for the accuracy of this information.