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Actuaries and Data Scientists

Evolution of actuaries and differences with data scientists



Actuarial Association of Europe

- The Actuarial Association of Europe (AAE) was established in 1978, originally as the Groupe Consultatif Actuariel Européen, to represent actuarial associations in Europe.
- Its purpose is to provide advice and opinions to the various organisations of the European Union

 the Commission, the Council of Ministers, the European Parliament, EIOPA and their various
 committees on actuarial issues in European legislation.
- The AAE currently has 38 member associations in 37 European countries, representing over 29,000 actuaries.
- Advice and comments provided by the AAE on behalf of the European actuarial profession are totally independent of industry interests.





"Those that fail to learn from history are doomed to repeat it." Sir Winston Churchill





Source: "Recent Challenges in Actuarial Science", Paul Embrechts & Mario V. Wüthrich





The Pioneers



Johan de Witt (1625 – 1672) "The Worth of Life Annuities Compared to Redemption Bonds"



Jacob Bernoulli (1655 – 1705) "Ars Conjectandi"

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1st Kind

The deterministic model–guided life actuary

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2nd Kind

The stochastic model–oriented non-life actuary

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4th Kind

Enterprise risk management actuary





5th Kind



Data driven and model guided, critical and socially responsible financial decision maker in an ever-changing world governed by uncertainty



The evolution of the actuaries - conclusion

It is not a reinvention of the actuarial profession.

It is merely the reflection of the evolving societal conditions (demographic, technological, environmental, political, and legal).



What are actuaries and what are data scientists

Chat GPT – Definition of an actuary

An actuary is a professional who specializes in assessing and managing financial risks, typically in the insurance and finance industries. They use mathematical and statistical techniques to analyze data and make predictions about future events, such as calculating insurance premiums, assessing pension fund liabilities, and helping organizations make informed decisions about financial strategies and investments. Actuaries play a crucial role in ensuring that businesses can manage and mitigate various uncertainties effectively.

Chat GPT – Definition of a data scientist

A data scientist is a professional who uses their expertise in data analysis, programming, statistics, and domain knowledge to extract insights and knowledge from large and complex datasets. They are responsible for collecting, cleaning, and analyzing data to discover patterns, make predictions, and informed decision-making. Data scientists work in various industries, including technology, finance, healthcare, and more, and their skills are crucial for organizations looking to leverage data for business intelligence, research, and problem-solving. They often use tools like programming languages (Python, R), machine learning algorithms, and data visualization techniques to accomplish their tasks.



Are they different?

Chat GPT – Differences actuaries and data scientists

Actuaries:

- Actuaries primarily work in the insurance and financial sectors, specializing in risk assessment, pricing, and financial planning.
- Their work is highly regulated in many countries, and they often need to pass specific actuarial exams and meet stringent regulatory requirements to practice as qualified actuaries.
- Actuaries rely on specialized models, actuarial tables, and financial mathematics tailored to their field.

Data Scientists:

- Data scientists work across a wide range of industries, including healthcare, technology, retail, and more, with a focus on extracting insights from data and solving complex problems.
- Data science is a relatively newer field and is less regulated compared to actuarial science. Data scientists do not typically have strict regulatory requirements.
- They use versatile tools such as programming languages, machine learning algorithms, and data visualization techniques to analyze data.

In summary, actuarial work is tightly regulated, primarily serving the insurance and finance sectors, while data science is a more diverse field with less stringent regulatory oversight.



The Good, the Bad and the Ugly



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How does the Actuarial Profession stay ahead?

- Code of Conduct
- Disciplinary Process
- Education Syllabus
- Continuous Professional Development (mandatory starting 01.01.2024)
- European Standards of Actuarial Practice (ESAPs model actuarial standards)
- European Actuarial Notes (EANs educational notes)



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