Actuarial Data Science
What does this mean for the role and skills of an actuary in the future?

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About the speaker

■ **Anja Friedrich** – *Manager, Synpulse*

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Data Science Working Group of the Swiss Association of Actuaries

Founded

- 2017

Goal

- establish the topic of Actuarial Data Science in Switzerland
- Design new syllabus for applied training and development

Core topics

- Writing tutorials to provide thorough and yet easy introduction to various methods from data science

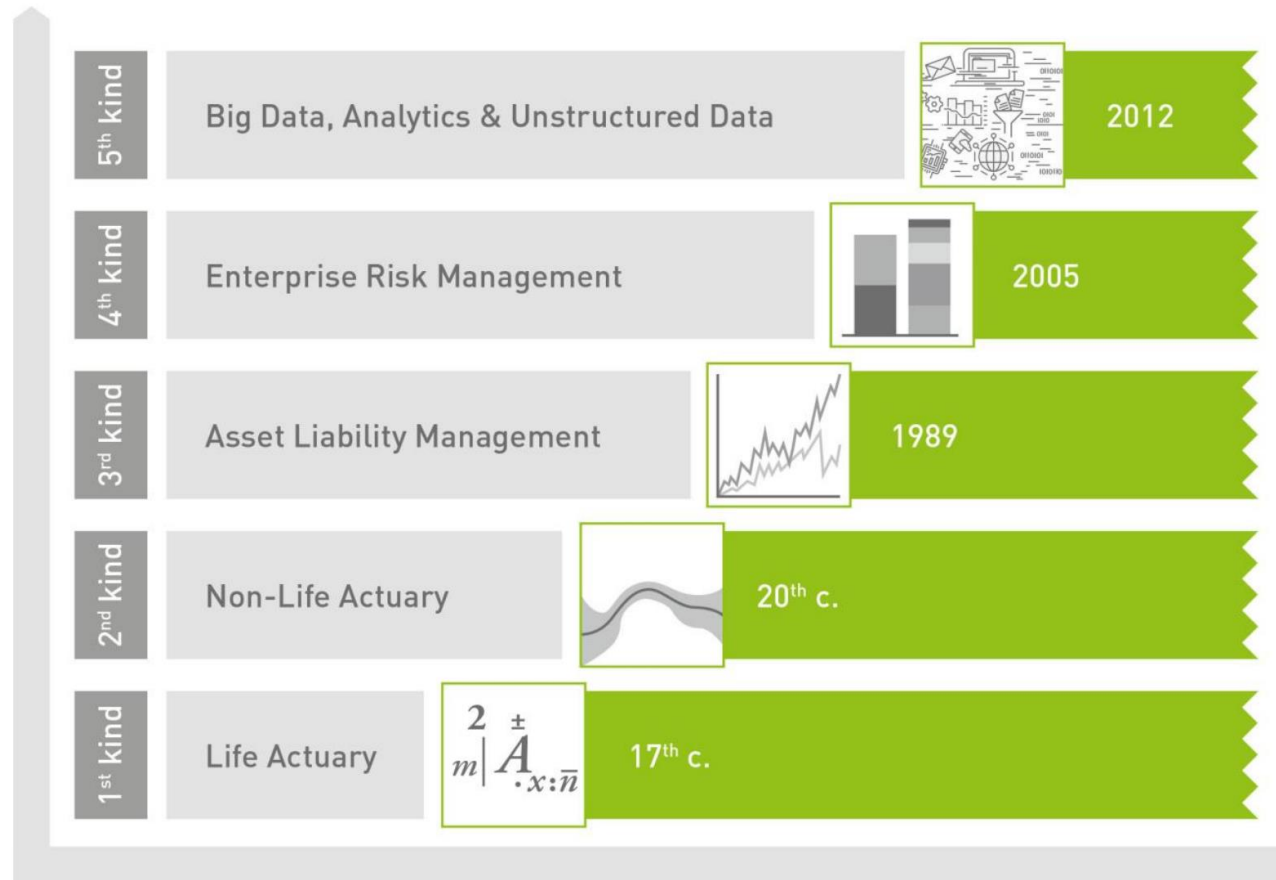- Bring up ethical and regulatory considerations

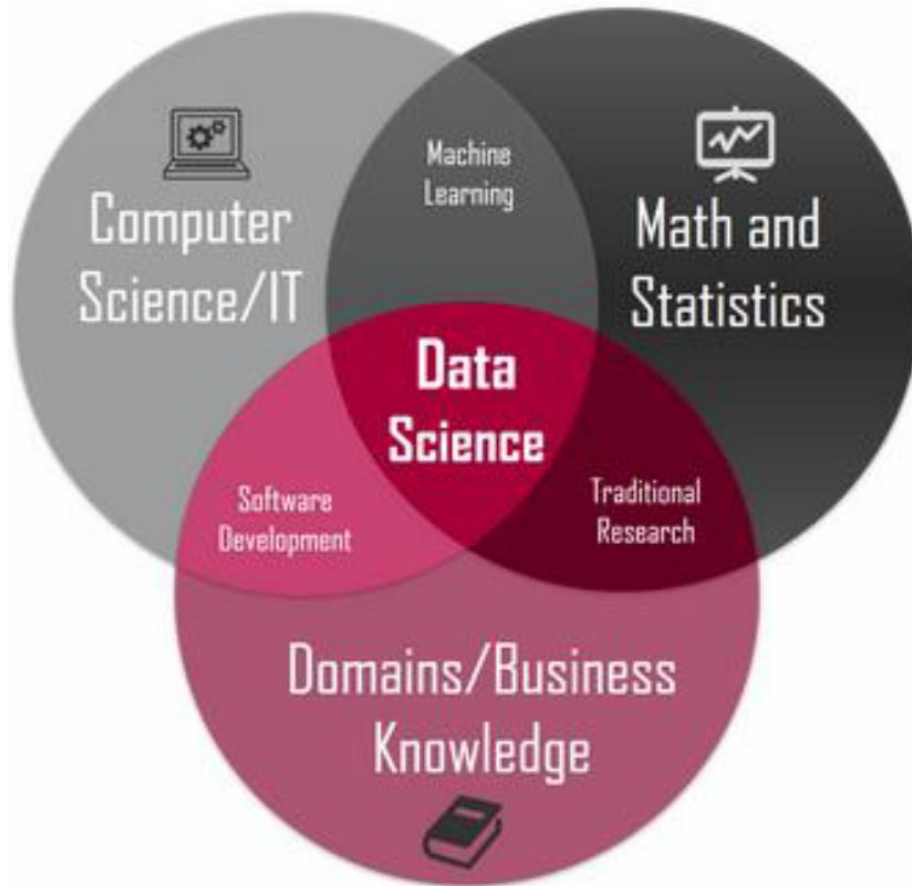- provide literature and events in the area of Actuarial Data Science

Evolvement of the role of an actuary

Fundamental changes triggered significant and lasting transformation effects on actuaries' job description:

- *1st kind*
  uses deterministic methods

- *2nd kind*
  uses probabilistic methods

- 3rd kind
  uses stochastic processes and aligned both sides of the balance sheet

- *4th kind*
  risk management was incorporated which is reflected in risk-based solvency rules (SST, Solvency II)

- *5th kind*
  expanded to include statistical and computer-science methods

Skills of the future

In context of actuarial work

- business knowledge to mean actuarial knowledge

- More precisely one would refer to actuarial data science instead of data science

Core competencies of an actuary

- actuarial matters to reliably assess the financial impact on insurance activities and managing risks

- processing and analyzing small and structured insurance data to answer actuarial problems

Future skills

- versed in statistics

- basic understanding of data science
  - o unstructured data and big data
  - o data architecture
  - o machine learning
  - o visualization
  - o computer programming

Role of the actuary in the future

Classical Actuary

- Actuaries working in pricing, reserving and risk management departments
- basic understanding of data science in context of their actuarial specialization

Actuarial Data Scientist

- Actuaries with in-depth grasp and practical knowledge of
  - Statistics
  - data science
  - actuarial science – proficient on specific and specialized issues
- work in actuarial teams and interfacing with IT and insurance data scientists

Thank you very much for your attention!

contact details

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