



Institute
and Faculty
of Actuaries

Continuing Professional Development Scheme

RPD Toolkit: Data Science and Artificial
Intelligence

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Your Objectives

This document is intended to be used in a Reflective Practice Discussion between a member of the IFoA and their 'appropriate person'. Part of the reflective process is identifying learning objectives and considering how those objectives can be met through activities and other learning opportunities.

To assist in this process the IFoA has created a series of RPD toolkits to allow you to explore an area in your Reflective Practice Discussion and consider whether you should learn more about that area.

This toolkit poses a few questions to aid the reflective practice discussion. There is a note of topics that are recommended by fellow practitioners, and sources of learning to allow you to build your knowledge.

At the end of your discussion, we hope you will have identified a learning objective and the means by which you can address the need.

Data Science and Artificial Intelligence (AI)

The IFoA considers data science and AI as a key domain for actuaries to apply their skills. There are however new and enhanced risks in applying such techniques. As a result, all IFoA members are encouraged to learn more about this area and consider how it affects their work.

Possible questions for your Reflective Practice Discussion

- Have you reflected upon the IFoA 2023 [risk alert](#) about the potential heightened risks from the use of AI by actuaries? What areas of your practice came to mind? Which gaps in your knowledge and/or skill set did you identify as a learning need?
- How confident do you feel in your knowledge of data science and AI? Whether you are a developer or user of relevant outputs, this could be from a technical or ethical perspective.
- How do you plan to learn more about regulatory expectations in relation to risks from data science and AI?
- How familiar are you with the available IFoA resources to support you in implementing data science and AI into your work?

- What are your thoughts about the tools available to develop data science and AI solutions?
- How do you think a risk management approach can help deliver safe and responsible outcomes in this space?

Topics to learn about

This list of topics has been recommended by IFoA members as a place to start developing or to continue to build your knowledge around data science and AI:

- Big Data – use of large and complex datasets
- Machine learning (ML) – a type of narrow AI which looks for patterns in data to improve predictiveness
- Generative AI and Large Language models
- Ethical use of AI

Sources of learning

On the IFoA website you will find references to a range of learning resources and a wealth of Data Science and AI related content.

The Virtual Learning Environment hosts a variety of learning opportunities, including [An Introduction to AI for Actuaries](#) course. [The Research Hub](#) holds active research activities including working Data Science Working Party outputs.

[The Certificate in Ethical AI](#), which the IFoA is promoting in partnership with the Chartered Institute for Securities & Investment (CISI), is a short course covering the fundamental ethical and management issues in the deployment of AI in finance.

We encourage you to explore the Data Science Community pages and discuss the content with your colleagues and peers to assist you in your self-directed learning.

The Financial Services Skills Commission also has a range of helpful AI and ML material in its [Future Skills Framework](#). This may help you to assess where you are on your journey in this area of expertise.

In addition to the risk alert previously mentioned, the IFoA Regulatory Policy team, on behalf of the Regulatory Board has published the following guidance material: [Thematic review report](#) looking at the increased involvement of actuaries in data science and AI.

Updated [non-mandatory guidance](#) on professional and ethical use of data science and AI by actuaries.

The IFoA host a number of events every year on the topics in this area, so keep an eye on the [Events Page](#).

Disclaimer: The IFoA has no affiliation with any of the external resources listed above. They are mentioned as a reference point for further information you may find helpful. The IFoA cannot accept any responsibility or liability arising from a decision by you to use any of these external resources.



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