

Understanding Data Ethics and AI

Course Delivery - Structure

The Understanding Data Ethics and AI self-paced course is made up of the following modules:

Module 1: Introduction to Data Ethics

Study Time: Approx 1.5 hours

This module aims to raise awareness and foster ethical thinking in data practices, enabling you to make responsible decisions when dealing with data in your professional practice.

Topics include:

What is data ethics?

Why is data ethics important?

Reflecting on data ethics

Module 2: Foundations of ethical decision-making

Study Time: Approx 2 hours

This module takes a brief step back from data ethics to look at the foundational philosophies that underpin ethical decision-making and how these impact on the decision making process in data centric examples.

Topics include:

Exploring ethical frameworks in decision-making

Unveiling the complexity of ethical decision-making

Steps for ethical decision-making

Reflecting on ethical decision-making

Module 3: Legal and regulatory frameworks

Study Time: Approx 2 hours

This module will develop your understanding of the legal and regulatory frameworks that govern data practices.

Activity

Exploring data ethics amidst regulatory landscapes

Responsible practices for producers of data: maximising reuse of data through licensing and sharing

Responsible practices for consumers of data: working with data from third-party sources

Reflecting on legal and regulatory frameworks

Module 4: Ethics and personal data

Study Time: Approx 2 hours

Legal frameworks provide a structure for how personal data can be used. However, there are many data practices that boost the usability of data that may compromise the privacy of individuals. In this module you will explore and develop skills in handling personal data responsibly

Topics include:

The ethics of personal data

How they watch you!

How to anonymise data

Hands-on: Anonymising data

This activity is AI-enabled and utilises the 'Automatic Tutor'. This uses generative AI to review the learners submission and provide personalised feedback.

Reflecting on the ethics of handling personal data

Module 5: Ethics in data collection

Study Time: Approx 2 hours

Data ethics is considered across every stage of the data lifecycle. This module supports you in evaluating your own data collection processes to determine their effectiveness.

Activity

Ethical data collection methods

Sources of bias during data collection

Navigating bias in terminology

Reflecting on data collection

Module 6: Bias and fairness in data and AI

Study Time: Approx 2 hours

In today's data-driven world, where artificial intelligence plays an ever-increasing role in shaping decisions and outcomes, understanding and addressing bias is paramount. This module is designed to equip you with the knowledge and skills to navigate the complex landscape of bias and fairness in data and AI.

Activity

Bias and the data lifecycle

Seeing through a world of numbers

Descriptive statistics and bias detection

Inferential statistics: making inferences from data

Build your own classifier and see if you can beat the AI

In this activity, learners engage with a classification simulation. Learners are asked to build a classification system that is evaluated against an algorithm designed by a machine, as well as a human-advised machine.

Bias and fairness: is it possible to be fair?

Reflecting on bias and fairness

Module 7: Transparency and explainability

Study Time: Approx 2 hours

By the end of this module, you will not only appreciate the significance of transparency and explainability in data and AI systems but also possess the knowledge to navigate and advocate for these essential principles more widely.

Activity

Transparency and explainability in data and AI systems

The transparency spectrum

Transparency approaches for data & AI

Explainability and interpretability of data and AI systems

Module 8: Tools and frameworks for evaluating ethical data practices

Study Time: Approx 1.5 hours

This module explores the tools and frameworks to evaluate data practices from an ethical perspective and provides the basis for you to apply impact assessments.

Activity

Evaluating ethical data practices

Data ethics checklists and evaluation criteria

Applying data ethics using ODI tools

The ecosystem of data ethics tools

Reflecting on applied data ethics